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EDITORIAL

Dear Colleagues;

In this issue of the Journal of Pelviperineology, we publish valuable studies. These studies, which contain important informations are at a level that will definitely affect your professional practice. In particular, I think that publishing these studies completely “free of charge” will reach a wide readership and lead to correct practices for women’s health. This is where the strength of our journal stems from.

I suggest you carefully read the editorial written by Dr. Darren M. Gold.

On the other hand, we held the 9th International Urogynecology Congress on 25-27 November 2022 in Pamukkale Richmond Hotel, Türkiye. We publish 55 studies accepted as oral presentations in the congress.

I think you will appreciate this issue, which is quite dense, equipped with high quality and educational information.

Stay healthy,

Prof. Dr. Ahmet Akın SİVASLIOĞLU

Editor-in-chief

INSTRUCTIONS TO AUTHORS

Pelviperineology is a quarterly published, international, double-blind peer reviewed journal dedicated to the study and education of the pelvic floor as one integrated unit. The publication frequency is 3 times a year (April, August, December) in every 4 months. The core aim of Pelviperineology is to provide a central focus for every discipline concerned with the function of the bladder, vagina, anorectum, their ligaments, muscles and female cosmetic surgery.

Pelviperineology publishes original papers on clinical and experimental topics concerning the pelvic floor diseases in the fields of Urology, Gynaecology and Colo-Rectal Surgery from a multidisciplinary perspective. In the published articles, the condition is observed that they are of the highest ethical and scientific standards and not have commercial concerns. Studies submitted for publication are accepted on the condition that they are original, not in the process of evaluation in another journal, and have not been published before. All submitted manuscripts must adhere strictly to the following Instructions for Authors.

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- acknowledgments and disclosures,
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- tables.

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  Structured summary
- **INTRODUCTION**
  Rationale
  Objectives

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5. Study selection
6. Data collection process
7. Data items
8. Risk of bias in individual studies
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10. Synthesis of results
11. Section/topic
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13. Additional analyses

- **RESULTS**

1. Study selection
2. Study characteristics
3. Risk of bias within studies
4. Results of individual studies
5. Synthesis of results
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- Case report
- Discussion
- References
- Figures and tables

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Review	6	6000 words	250 words (structured)	100	N/A	10	6
Case Report	6	2000 words	100 words (structured)	15	3	3	6

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* Treitz W. Ueber einem neuen Muskel am Duodenum des Menschen, uber elastiche Sehnen, und einige andere anatomische Verhaltnisse. Viertel Jarhrsxhrift Prar. Heilkunde (Prager) 1853; 1: 113-114 (cited by Thomson WH. The nature of haemorrhoids. Br J Surg 1975; 62: 542-52. and by: Loder PB, Kamm MA, Nicholls RJ, et al. Haemorrhoids: pathology, pathophysiology and aetiology. Br J Surg 1994; 81: 946-54).

A chapter from a book:

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"OAB" crisis. Has ICS entropy failed one billion women?

Darren M. GOLD

Department of Surgery, St Vincent's Hospital Clinical School, University of NSW, Sydney, Australia

Citation: Gold DM. "OAB" crisis. Has ICS entropy failed one billion women? Pelviperineology 2022;41(3):149-152

ABSTRACT

This editorial describes how formation of the international continence society (ICS) in 1971, the standardization of definitions as well as other important advances, led to a whole new medical discipline, Incontinence; how these achievements quickly led to the magisterial status which the ICS has today. It also analyses how the ICS may have succumbed to the entropy which can affect any system over a 50-year period. Discoveries made 30 years ago which can potentially cure overactive bladder (OAB) and other bladder conditions which affect one billion women have been ignored. This fact, and the anticholinergic causation of Alzheimer's disease has created a crisis for OAB. A suggested way forward is to change the OAB definition from "OAB" (causation in the detrusor muscle) to "OAB" (causation from structures mainly outside of the detrusor muscle). Such changes open the door to a whole new range of research and treatments, some undoubtedly not yet conceptualized.

Keywords: OAB; entropy; ageing ICS; integral theory paradigm; crisis; definitions

Dedication

This editorial is respectfully dedicated to the 50 urologists whose pioneering insights at the initial 1971 ICS meeting laid the foundation of a whole new medical discipline which did not previously exist, incontinence. Incontinence of some kind affects 20-30 out of every 100 people in the world.

ICS Growth and Power

The background to the 1971 international continence society (ICS) meeting was a growing world-wide interest in bladder and anorectal function and dysfunction in the first half of the 20th century. This "growing interest", when translated to published literature, is best described as "scientific chaos". What is now described as "overactive bladder (OAB)" had multiple descriptions, including "dyssynergic detrusor dysfunction", "psychogenic bladder", "uninhibited bladder", "painful bladder". Then there were complexities and contradictions such as coincidence of urge and stress, activation of urge on coughing, apparent causation of incontinence by childbirth and menopause (yet findings of incontinence in nulliparas and children!), *de novo* urgency after stress urinary incontinence (SUI) cure by the then gold standard, burch colposuspension, and much more. In trying to sort some order out of this "scientific chaos", a group of scientifically-minded urologists held the first ICS meeting in exeter, UK, hosted by Eric Glen in 1971. Their first step was seminal, standardization of definitions, to create a common language. Instead of a plethora of different descriptions, researchers and clinicians now knew what others

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were talking about. By 1976, urodynamics was recommended by an expert committee so as to objectively separate SUI from urge incontinence, especially prior to undergoing surgery for SUI. This convention continues unchanged today.

The original definitions brought some order to the prevailing "scientific chaos" and were universally adopted. In time, almost all pronouncements of the ICS achieved a magisterial status, and with it, the enormous power which comes from a singular reference point. This power set the stage for the inevitable ravages of entropy which occur with any system.[1]

Entropy is a fundamental law of nature which mandates a natural decline into disorder.[1] Though originally referenced to the 2nd Law of Thermodynamics, entropy has since been generally applied to every aspect of the world, even societal systems.[1] New energy has to be applied to a system to maintain its function.[1] The energy for a societal system such as the ICS would seemingly come from progressing new concepts which accord with its mission statement.

Pathogenesis of OAB is known it was urodynamically demonstrated in neurourology and urodynamics, the official ICS journal in 1993, that "OAB" was a prematurely activated, uncontrolled micturition.[2] In the same journal in 1999, it was urodynamically demonstrated that the bladder was externally controlled by a binary feedback central/peripheral mechanism,[3] Figure 1.

OAB cure is possible It was demonstrated by a urodynamically controlled trial in 1997,[4] and since, by data from many thousands of cases,[5-16] that OAB can be cured in up to 80% of women, by daycare ligament repair surgery where there is a positive clinical test, Figure 1.

Change? The salient question is, "should knowing the pathogenesis of OAB and how it could be cured (since 1997) have resulted in a change in direction from the ICS regarding OAB management?" According to Kuhn[17] in his book "the structure of scientific revolutions", a new paradigm*, for example, ligament repair of OAB, does not dominate by being more effective than the old - there needs to be a crisis for a change from the old paradigm**.

*The new paradigm the cause of OAB "overactive bladder" (urge, frequency, nocturia) is mainly outside of the bladder, from laxity of the supporting ligaments of the vagina.[18]

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Inability of the now weakened muscle forces to stretch the vagina to support the stretch receptors "N", Figure 1, results in excess afferent impulses from "N" reaching the cortex, which are interpreted as urge symptoms. If, when contemplating surgery, urge can be diminished by a "simulated operation", for example the speculum test, Figure 1, intravaginal probe,[5] or for nocturia, a roll gauze,[15] OAB is potentially curable/improvable by ligament surgery, either native ligament repair,[15] or in older women, a sling.

**The old paradigm the ICS definition of OAB suggests the pathogenesis is in the detrusor itself and therefore is incurable. Management of OAB since 1976 has been based on urodynamics.

The OAB crisis starting in the 1970s, the ICS and later, the ICI, have stated and taught that OAB pathogenesis was unknown, and it was incurable. Nothing has changed for 50 years, except

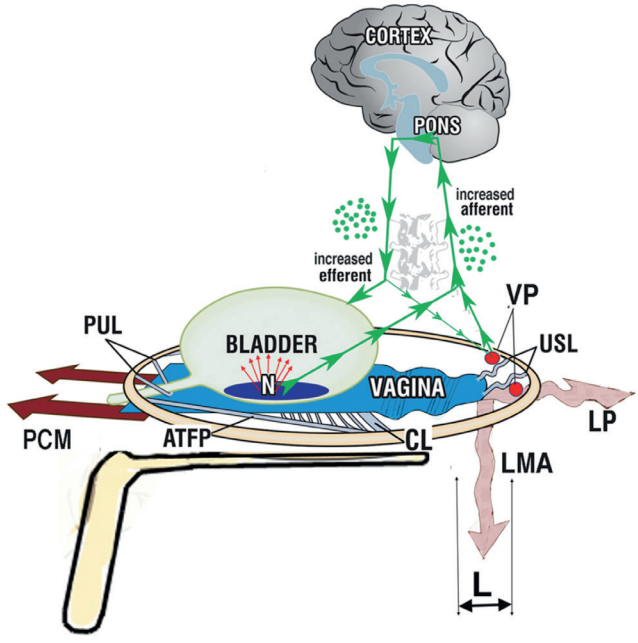

Figure 1. "Simulated operation" speculum test. 3D view of pubourethral (PUL) and USL attachments to the pelvic brim. The speculum mechanically supports urothelial stretch receptors "N" at bladder base, uterosacral ligaments "USL" and visceral plexuses "VP". "L" indicates USL laxity. Wavy lines in the muscles LP and LMA which contract against USLs indicate weakened muscle forces, as a muscle requires a firm insertion USL point to exert optimal force.

Pathogenesis of urge the wavy form of the vagina indicates looseness; it cannot be stretched sufficiently to support "N" which now fire off excess afferents at a lower bladder volume to activate the micturition reflex prematurely. The cortex interprets these impulses as "urge."

Pathogenesis of pain lax USLs (laxity indicated by wavy lines) cannot support the visceral plexuses "VPs" and these fire off "rogue" impulses to the cortex which are interpreted as pain.

How the speculum test works. It mechanically supports USLs, and therefore VPs, mechanically restoring VP support; the speculum stretches the vagina to support "N" to decrease the quantum of afferent impulses to the cortex; when the test is positive, the patient reports lessening of pain and urge.

PCM: pubococcygeus muscle; LP: levator plate; LMA: conjoint longitudinal muscle of the anus

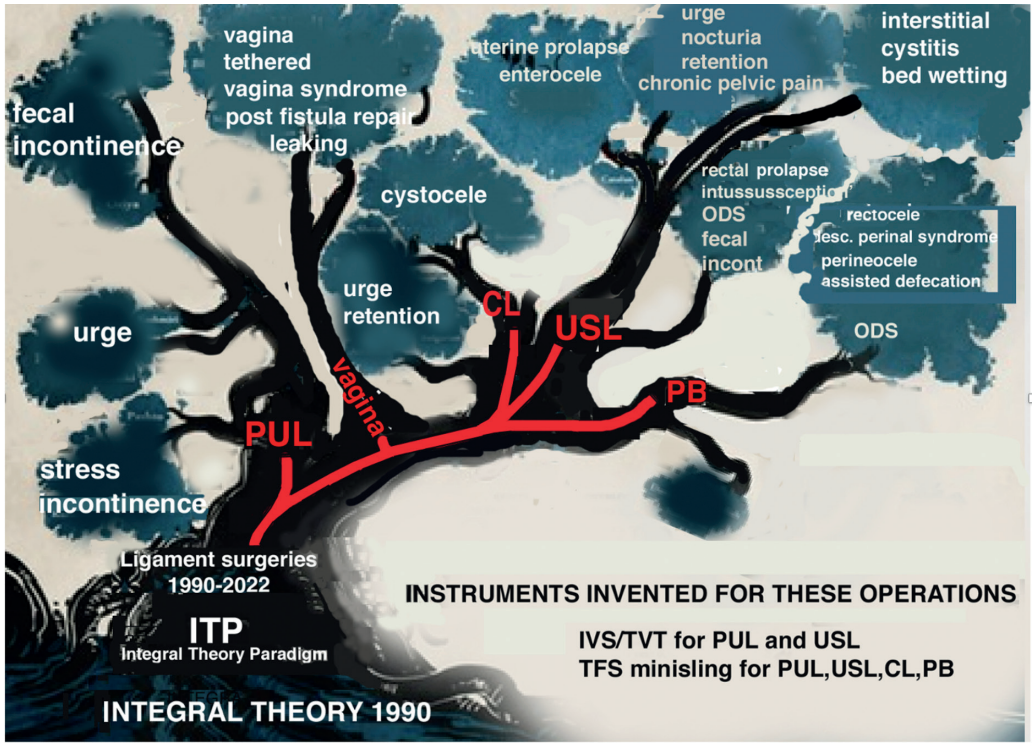

Figure 2. Growth of the integral theory paradigm from 1990 to 2022.

that anticholinergics, the drug treatment of choice, is now proven to cause Alzheimer's disease. There truly is a crisis for OAB, especially with a rapidly ageing population. Of the 4 billion women on the planet, an estimated one billion suffer from OAB and other bladder conditions. Given the power and status of the ICS definitions and statements, the message from ICS to the one billion women on the planet suffering with "incurable" bladder conditions is they are condemned to a life of misery with no hope of cure.

ICS mission statement "The ICS is a registered charity with a global health focus which strives to improve the quality of life for people affected by urinary, bowel and pelvic floor disorders by advancing basic and clinical science through education, research, and advocacy." In the 2600 pages of the ICI book, there is no mention of the integral theory paradigm (ITP) on which OAB pathogenesis and cure are based, not even as regards its foundation of the gold standard midurethral sling.

Resolution of the Crisis

It is in the hands of the ICS committee to put energy into the system and reverse the entropy which has prevented it seeing the advances offered by other systems, for example, the major advances in pathogenesis and cure for OAB and other conditions, offered by the anatomically-based ITP, Figure 2. The 1st step is to change the OAB definition from "overactive bladder" (causation in the detrusor muscle) to "overactivated bladder" (causation from structures outside of the detrusor muscle).[19] Changing the definition to include causes outside the detrusor opens the door to a whole new range of research and treatments, some undoubtedly, not yet conceptualized.

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ETHICS

Peer-review: Internally peer-reviewed.

DISCLOSURES

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ORIGINAL ARTICLE

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Effect of mid-urethral sling surgery on sleep quality and quality of life in the treatment of stress urinary incontinence

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ABSTRACT

Objectives: This study aims to evaluate the effect of surgical outcomes on quality of life and sleep quality following stress urinary incontinence (SUI) surgery.

Materials and Methods: Patients diagnosed with SUI and treated with a mid-urethral sling were evaluated retrospectively. Fifty-six patients aged 40-75 years who had a follow-up period of more than 12 months, could not be treated conservatively, and had not previously undergone anti-incontinence or urogynaecological surgery were included in the study. Demographic findings of the patients and the pelvic examination were performed. The patients were evaluated preoperatively and postoperatively using the incontinence quality of life scoring system (I-QOL), Pittsburgh sleep quality index (PSQI), and cough stress pad test.

Results: A success rate of approximately 93% was achieved, with an objective cure in 46 patients (82.1%) and a subjective cure in six patients (10.8%). Statistically significant improvements were found in the patients postoperative I-QOL and PSQI scores. According to Spearman correlation analysis, there was a correlation between I-QOL and PSQI (r=-0.974). In women 65 years and older, the duration of incontinence symptoms was significantly longer (p<0.001); frequency of persistent incontinence (p=0.026) and incontinence episodes were evaluated as during sleep and/or spontaneous (p=0.011).

Conclusion: There is a relationship between quality of life and sleep quality in women with SUI. It was determined that surgical treatment significantly improved the quality of life and sleep quality of women with SUI.

Keywords: Stress urinary incontinence; quality of life; Pittsburgh sleep quality; mid-urethral sling; coughing stress ped test

INTRODUCTION

Urinary incontinence (UI) is not only characterised by urinary symptoms; it also directly affects a women quality of life, social life, and physical and mental health.[1] UI can cause sexual dysfunction, anxiety, depression, sleep disorders, and falls due to frequent awakening at night, which is associated with morbidity and can even lead to fractures.[2,3] It has been reported that women with UI have more sleep disorders than the general

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population in the same age range.[4] Sleep disorders seriously affect quality of life. Objective and subjective measurements are used for the clinical evaluation of UI.[5]

Lifestyle modifications to strengthen the pelvic floor muscles, pessary exercises, electrostimulation, and medical treatment options have been suggested in the literature as conservative approaches to UI.[6] In surgical treatment, transvaginal tapes (TVTs) (the first generation of synthetic slings) were developed as mid-urethral slings to achieve retropubic suspension with 80% cure rates.[7] In 2001, Delorme[8] described tension-free transobturator tapes (TOTs) (the second generation of slings) due to complications with TVTs. However, because of severe complications associated with the TOT technique, the first tissue fixation system (TFS) was described in 2005.[9] The TFS technique was found to have a higher cure rate and lower complication rate than TOT.[10] Single-incision mini-slings (SIMS) have become the most popular surgical method in recent years; they provide fixation of the mid-urethral tape to the obturator internus muscles at the level of the bilateral tendinous arch through a single incision.[11]

This study aims to evaluate the effect of surgical outcomes on quality of life and sleep quality in patients who were operated on with the mid-urethral sling technique due to stress urinary incontinence (SUI). Our hypothesis is that there is relationship between sleep and quality of life in patients with SUI.

MATERIALS AND METHODS

Patients diagnosed with SUI and treated with a mid-urethral sling were evaluated retrospectively. Patients with overflow incontinence, mixed and urge incontinence, overactive bladder, or genital prolapse; patients who had previously undergone anti-incontinence or urogynaecological surgery; and patients for whom preoperative urodynamic evaluation could not be performed were not included in the study. The inclusion criteria were as follows: age 40-75 years, at least 12 months follow-up, Valsalva leak point pressure <60 cm H_2O in the urodynamic evaluation, and not able to be treated conservatively. Fifty-six patients who met the inclusion criteria and attended their last follow-up appointments were included in the study.

Each patient's age, body mass index (BMI), smoking status, parity, gravida, menopausal status, chronic systemic diseases, and marital status were obtained from her medical records. Regarding urogynaecology, the patients were asked about incontinence symptoms, and pelvic examination, urodynamics, and pelvic ultrasonography were performed. Patients were evaluated preoperatively and postoperatively using the incontinence quality of life instrument (I-QOL), Pittsburgh sleep quality index (PSQI), and supine cough stress pad test (CSPT).[10,12,13]

The I-QOL is a questionnaire that consists of 22 question evaluated in three sections: avoidance and limiting behaviour, psychosocial impact, and social embarrassment.[12] Each question has five answers with values from 0 to 5, which adds up to a total score of 0-110. The higher the score, the better the quality of life. The PSQI consists of 24 question.[13] The 18 scored questions of the scale consist of seven components, which include subjective sleep quality (component 1), sleep latency (component 2), sleep time (component 3), habitual sleep efficiency (component 4), sleep disturbance (component 5), sleeping medication use (component 6), and daytime dysfunction (component 7). Each of the seven components is assigned a score of 0-3 points, which provides a total score of 0-21. The sleep quality of those with a score of 5 or less is considered "good", while a score above 5 indicates "poor" sleep quality. A PSQI score above 5 indicates that the person has severe problems in at least two components of sleep. For the CSPT, the patient is given a sanitary pad of known weight and asked to cough 10 times while standing. Then, the pad is weighted again; values below 0.5 grams are considered normal, while values above 0.5 grams are considered abnormal.

All operations were performed as previously described by a single surgeon (AAS) in the lithotomy position.[10,14] Surgically, two anchors attached to an adjustable sling were placed on the lower surface of the pubovaginalis/pubourethral ligament/muscle complex just behind the urogenital diaphragm (perineal membrane). An 18-gauge rigid Foley catheter was tightened until the tape made contact with the urethra and did not indent.[10,14]

Postoperative CSPT was performed to evaluate the success of the operation. If the patient's supine CSPT was negative and urinary incontinence was reported to have improved, the surgical outcome was considered an objective cure. If the patient reported improved urinary incontinence but the supine CSPT was positive, the surgical outcome was considered a subjective cure. The absence of a change in incontinence after surgery was considered a failure.[10,14] Postoperative complications, if any, as well as urinary retention and groin pain, were assessed.

Statistical Analysis

The data were evaluated using the IBM SPSS Statistics, Version 23.0 (IBM Corp., Armonk, NY, USA) program. The Shapiro-Wilk test was used to evaluate the distribution of the data. Student's t-test was used for normally distributed data, and the Mann-Whitney U test was used for non-normally distributed data in comparing groups. The Wilcoxon test was used to evaluate dependent groups that did not show a normal distribution. The chi-square test, Fisher's Exact test, and the Fisher-Freeman-Halton test were used to evaluate categorical variables. A p-value of <0.05 was considered statistically significant for all tests.

RESULTS

The demographic data of the patients are shown in Table 1. Forty percent of the patients had a history of one or more additional systemic diseases. A statistically significant improvement was found in the patients postoperative I-QOL and PSQI scores (Table 2). According to Spearman correlation analysis, there was a correlation between postoperative I-QOL and PSQI (r=-0.974) (Figure 1). The rates of being married and sexually active were higher in patients under 65 years of age (p=0.028). For patients 65 years and older, the duration of incontinence symptoms was significantly longer (p<0.001); frequency of persistent incontinence (p=0.026) and incontinence episodes were evaluated as during sleep and/or spontaneous (p=0.011).

The surgical outcomes were classified as follows: Four failures, six subjective cures, and 46 objective cures (Table 3). The preoperative PSQI scores of the patients with failure and subjective cure were "poor". Duration of incontinence symptoms five years or longer, frequency of persistent incontinence, and incontinence episodes were evaluated as during sleep and/or spontaneous (Table 3).

Two patients with surgical failure did not accept an additional surgical intervention due to advanced age and comorbidities; follow-up treatment was continued with oral antimuscarinic therapy. For the other two patients with failure, a retropubic TVT operation was performed in which the mesh was excised 12 and 15 months after the first operation due to mesh erosion.

There were no additional intraoperative complications. Anchor detachment was not observed in any of the patients. Urinary retention occurred in four patients in the early postoperative period and was managed with catheterization. Seven patients had the complaint of groin pain during the first six months; this complaint resolved in five of the patients within six months. The two (3.5%) patients with ongoing groin pain were those whose surgery was deemed a failure due to mesh erosion and who underwent revision surgery. The two patients with mesh erosion were postmenopausal, had a smoking history, had a BMI higher than 30 kg/m^2, and had multiple systemic diseases, such as diabetes mellitus.

Table 1. Demographic results

Variables	n (%)
Age (years)	69.5±8.4 (range; 40-74)
BMI (kg/m^2)	27.8±3.2 (range; 20.9-35.9)
Follow-up (months)	30.4±10.9 (range; 14-60)
Gravida*	4 (3-5)
Parity*	3 (2-4)
Previous childbirth (parity ≥1)	54 (96.5%)
Marital status (married, sexually active)	38 (68%)
Menopause status	35 (62.5%)
Smoking habit	32 (57%)

BMI: body mass index; mean ± SD; * median (IQR); SD: standard deviation; IQR: interquartile range

Table 2. Preoperative and postoperative evaluation of incontinence quality of life instrument and Pittsburgh sleep quality index

Variables	Preoperative	Postoperative	p
I-QOL	59±20.2	75.4±22.8	<0.001
PSQI	12.6±6.3	10.1±5.8	<0.001

I-QOL: incontinence quality of life instrument; PSQI: Pittsburgh sleep quality index

DISCUSSION

We achieved a 93% success rate in objective (82.1%) and subjective (10.8%) cures after SUI surgical treatment with our 30-month follow-up results. Sivaslioglu et al.[10,14] reported in their study that the objective cure rates were better in the SIMS group than in the TOT group at three and five year follow-up appointments. The objective cure rate was 83% in the SIMS group and 75% in the TOT group at 5-year follow-up appointments.[10,14] Several large meta-analyses compared the results of SIMS, TOT, and TVT.[15,16] There were no differences between surgical techniques in terms of objective cure, but SIMS surgery was reported to be safe and effective, with fewer perioperative complications.[15-17]

Sivaslioglu et al.[10] observed postoperative groin pain in one-third of TOT patients but none in the SIMS group at their 5-year follow-up appointments. Similarly, Masata et al.[18] reported that the

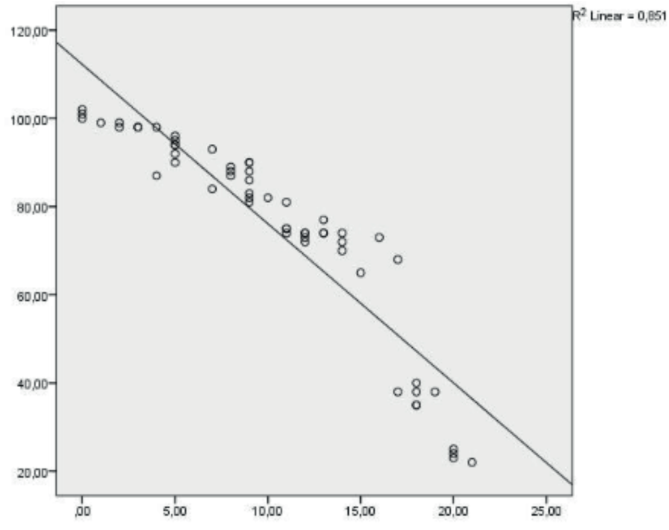

Figure 1. Correlation analysis between incontinence quality of life instrument and Pittsburgh sleep quality index

Table 3. The relationship between surgical cure rate and incontinence symptoms and sleep quality

Variables		n (%)	Objective cure 46 (82.1%)	Subjective cure 6 (10.8%)	Failure 4 (7.1%)	*p*
Preoperative CSPT	Negative	26 (46.4%)	24	2	0	0.123
	Positive	30 (53.6%)	22	4	4	
Postoperative CSPT	Negative	46 (82.1%)	46	0	0	<0.001
	Positive	10 (17.9%)	0	6	4	
Preoperative PSQI	Good (0-5)	10 (17.9%)	10	0	0	0.515
	Bad (6-21)	46 (82.1%)	36	6	4	
Postoperative PSQI	Good (0-5)	16 (28.6%)	30	0	0	0.137
	Bad (6-21)	40 (71.4%)	16	6	4	
Duration of incontinence symptoms (years)	1-3	17 (30.4%)	17	0	0	0.016
	3-5	14 (25%)	13	0	1	
	>5	25 (44.6%)	16	6	3	
Frequency of Incontinence	Occasionaly	8 (14.3%)	8	0	0	0.120
	Sometimes	10	10	0	0	
	Generally	13	12	0	1	
	Persistent	25	16	6	3	
Incontinence episodes	During sleep or/and spontaneous	13	3	6	4	<0.001
	During physical activity	32	32	0	0	
	Urinating to prevent incontinence	11	11	0	0	

CSPT: cough stress pad test; PSQI: Pittsburgh sleep quality index

mini-sling group had lower intensity and shorter postoperative pain than the TVT group. In the present study, there was groin pain in seven patients within the first six months, but it only persisted beyond six months in two patients. The two patients with persistent groin pain had mesh erosion (3.5%), and their complaints regressed after excision. In the literature, mesh erosion rates similar to this study have been reported in mini-sling groups (3.37-4.3%).[15,17,19]

It has been reported that the risk of UI increases by one-third in overweight individuals and almost doubles in obese patients. The risk is also higher in postmenopausal patients.[20,21] Consistent with the risk factors defined in the literature, 40% of the patients in this study had one or more additional diseases. Also, 62.5% were postmenopausal, and the sample mostly consisted of overweight patients with a mean BMI of 27.8 kg/m^2.[20,22] In addition, 57% of the patients had a history of smoking. Possible patient-related factors associated with mesh erosion in this study included smoking habits, advanced age, high BMI, and additional systemic diseases.

Some studies have focused on the surgical treatment of UI and its impact on mental health. Rosenzweig et al.[23] reported that successful surgical treatment significantly improved tension and sleep disturbances, while unsuccessful results significantly worsened UI-related depression and sleep problems. Stoffel et al.[24] reported that UI symptoms are a risk factor for depressive symptoms. In the present study, patients with more severe and long-standing symptoms had higher rates of failure or subjective cure after surgical treatment, and it was observed that their quality of life and sleep quality did not improve. Four patients with postoperative failure had persistent SUI symptoms; postoperative I-QOL and PSQI scores worsened rather than improved.

Although quality of life scores may improve, sleep quality may worsen after UI surgery, especially in older women.[25,26] In a study in which UI patients were treated medically, although there were no significant differences in PSQI total scores after treatment, it was found that there was some improvement in PSQI scores.[27] In the present study, there was an improvement in postoperative PSQI scores; in particular, the sleep quality of six patients showed a transition from poor to good. This suggests that, although improving UI symptoms improves quality of life, sleep quality may not improve due to different factors that affect sleep.

In our study, the mean postoperative I-QOL score increased, indicating a better quality of life after surgery. It has been

reported that UI is associated with poor sleep quality and sleep disorders, and sleep dysfunction increases as the frequency of UI increases.[4,25] In particular, nocturia is one of the most common reasons for waking up at night. It has been shown that there is a relationship between nocturia and poor sleep quality.[28,29] Patients with more severe urinary symptoms had a much lower quality of life and worse sleep quality. In the present study, as the women's I-QOL decreased, there was an accompanying deterioration in all sleep-related parameters and sleep quality, increased use of sleeping pills, and greater daytime dysfunction. Thus, the correlation analysis indicates that there is a close relationship between I-QOL and PSQI, suggesting a strong relationship between poor sleep quality and poor quality of life.

Study Limitations

Some limitations of this study should be addressed. There were fewer patients in this study compared to some larger studies on this topic. The lack of a control group that underwent a different type of surgery and had long-term follow-up results is another limitation. In addition, the results cannot be generalised because all of the patients had serious enough urinary symptoms to warrant surgery, the ages were not homogeneous, and other diseases affecting sleep, such as obstructive sleep apnea syndrome and restless legs syndrome, could not be diagnosed. Another limitation is that other life scores, such as depression and anxiety scores, were not evaluated.

CONCLUSION

This study found a close relationship between quality of life and sleep quality in women with SUI. It was determined that surgical treatment significantly improved the quality of life and sleep quality of the women with SUI. However, women with severe and prolonged SUI symptoms may not experience improved sleep quality and quality of life despite surgical treatment.

ETHICS

Ethics Committee Approval: The study protocol was approved by the Institutional Review Board at the Tokat Gaziosmanpaşa University (21-KAEK-152).

Informed Consent: Informed consent was obtained from all individual participants included in the study. All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards.

Peer-review: Externally peer-reviewed.

Contributions

Concept: A.A.Ö., A.A.S.; Design: A.A.Ö., A.A.S.; Data Collection and/or Processing: A.A.Ö.; Analysis and/or Interpretation: A.A.S.; Literature Search; A.A.Ö.; Writing: A.A.Ö., A.A.S.

DISCLOSURES

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Correlation between urinary incontinence and subclinical diseases of the pelvis: What is neglected in the physical examination?

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ABSTRACT

Objectives: To evaluate and compare the presence of underlying and subclinical diseases of the pelvis through a functional preoperative physical examination in patients undergoing urinary incontinence correction and presentation of a video with the hypertonic pelvic floor and chronic pelvic pain examination.

Materials and Methods: Fifty-eight women presenting urinary incontinence were evaluated for superficial and deep pain using the visual analog scale and divided in 2 groups: With and without hypertonic pelvic floor, through electromyography.

Results: The prevalence of hypertonic pelvic floor in incontinent women in our study was 17.2%. Women with hypertonic pelvic floor had an odds ratio 5.37x higher of referring pain (p=0.02) and 5.6x higher of referring deep pain (p=0.01) during physical examination. Patients with hypertonic pelvic floor were also significantly younger (p=0.02), with a median age of 8,5 years less (40.5 years) than patients without hypertonic pelvic floor (49 years). Women who underwent cesarean sections had a risk 5x lower of displaying hypertonic pelvic floor (p=0.03).

Conclusion: Hypertonic pelvic floor and chronic pelvic pain can be identified in patients with urinary incontinence through standardized physical examination and treated preoperatively, minimizing the probability of being attributed to a complication of pelvic surgery.

Keywords: Pelvic floor evaluation; pelvic pain; physical examination; urinary incontinence; urinary incontinence surgery

INTRODUCTION

In the past couple of years, some complications have been observed after the surgical correction of stress urinary incontinence (SUI) involving meshes (Figure 1).[1]

Recent data have suggested that, in the follow-up period of eight years, 2.7% of all retropubic slings and 1.9% of the transobturator slings were removed due to chronic pelvic pain (CPP).[1]

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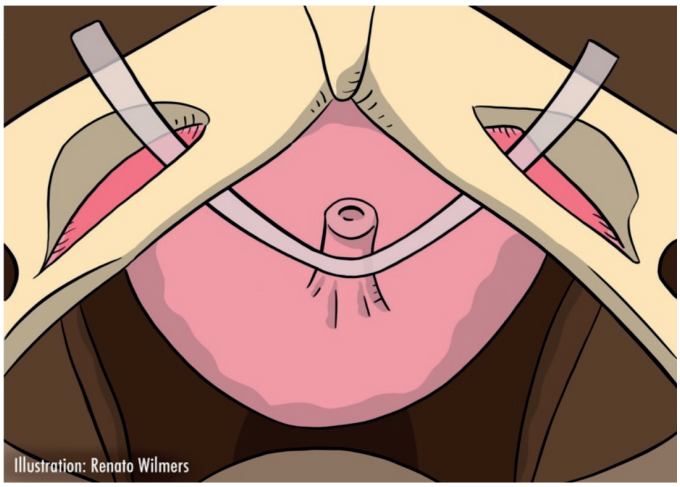

Figure 1. Transobturator sling (illustration)

Since 2011, the Food and Drug Administration (FDA)[2] has been studying the safety and efficiency concerning the use of surgical meshes in the treatment of SUI and pelvic organ prolapse (POP). Through the publication of recent research and data analysis, the FDA has been able to inform patients and doctors about SUI, surgical techniques and possible complications of the postoperative period involving meshes.[2] The Agency has also recommended that the use of surgical meshes in the SUI procedure remain labeled as Class II, which stands for low and moderate risk devices, as well as proposed studies conducted by synthetic sling manufacturers addressing post commercialization safety and efficiency. Physicians and patients are alert and waiting for the final review, foreseen to be published by the end of 2022.[2]

CPP is defined as persistent and non-cyclic pain perceived to be in structures related to the pelvis and lasting more than six months.[3] Once trigger points feedback is created, pain can become self-sustained, even after the visceral origin of the referred pain has been resolved.[4]

Our research was based on the evaluation of patients who actively sought treatment for urinary incontinence (UI), but were diagnosed during their assessment with subclinical diseases, such as CPP and hypertonic pelvic floor (HPF). These conditions could be associated with pain prior to the surgical procedure, rather than a complication of surgery.

Active search for HPF is not routine during medical physical examination; thus, it is underdiagnosed.[5] HPF is described by the same authors, in 2018, as being a primary issue or an adaptation of an acute or chronic injury, reaching one or more components of the pelvic floor skeletal muscle structures, culminating in this type of myofascial pain (Figure 2).[5]

The objective of this research is to evaluate and compare the presence of underlying and subclinical diseases of the pelvis through a functional preoperative physical examination in patients undergoing UI correction and presentation of a video with the HPF and CPP examination.

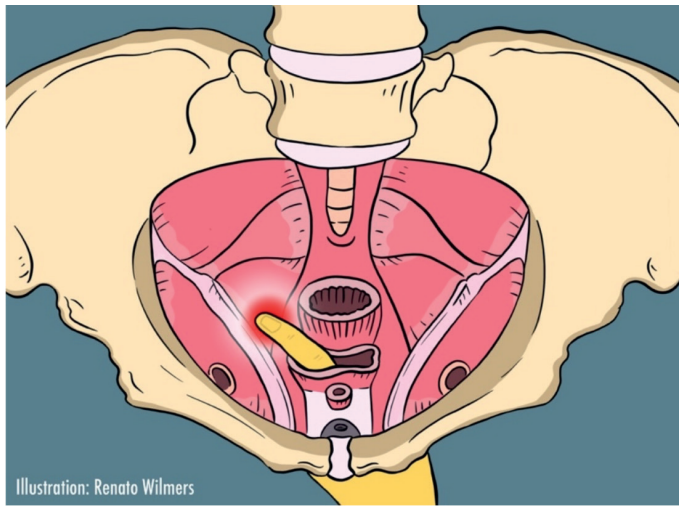

Figure 2. Trigger point on physical examination (illustration)

MATERIALS AND METHODS

The scope of this observational and cross-sectional study involved 58 women (18-59 years old) who presented with UI, from university hospitals and private medical offices. Patients were previously informed about the objective of the study, agreed to participate, and signed a free and clarified consent form. The research project was approved by the Research Ethics Committee of Faculdade Inspirar (opinion number: 1,833,987); and was approved by the Co-participant Institution, HC-UFPR-Hospital de Clínicas of Federal University of Paraná (opinion number: 2,520,073).

Standardized physical examination was conducted, where they were evaluated for superficial and deep pain using the visual analog scale (VAS), scoring points from 0 to 10, and for any other pelvic anomalies, such as pop or the presence of trigger points. They were also subjected to an electromyography of the pelvic floor, which divided them into two groups: Those who had evidence of HPF and those who did not.

The exclusion criteria were as follows: Pregnant women, women during the first six months post birth or pelvic surgery, women presenting with an organ prolapse equal to or greater than stage III from the POP-quantification (POP-Q),[6] women with urinary infection or intrapelvic masses, and women who used an intrauterine device or pacemaker.

The functionality of the pelvic floor muscles (PFM) was analysed through the Clinical Practice Guide of the Brazilian Association of Pelvic Physiotherapy, which was translated by the Royal Dutch Society for Physical Therapy and updated.[7,8] It consisted of

static and dynamic inspection, digital palpation, and functional evaluation.

Pain mapping was performed with patients in the lithotomy position and with an empty bladder. Superficial and deep pain evaluation was conducted through digital palpation of the vaginal wall using the examiner's index finger. It initiated on the external third of the vagina at 6 o'clock following clockwork orientation until it reached the internal wall of the vagina, seeking deep pain in bundles of the puborectalis muscle and left and right sides of the obturator internus muscle (Figure 3).

Pain was evaluated using the VAS, which is one of the most studied and validated methods for chronic pain.[9]

Chronic urogenital pain (CUP) was mapped and evaluated using an integrated mapping and assessment protocol, designed to systematically localize the origins of pain in CUP syndromes, allowing the patient to understand the pain and the physician to decide whether an intervention is the best option.[10]

Pelvic muscle function was evaluated through rest and maximum voluntary contraction electromyography, and the level of relaxation was measured after peak contraction. HPF was diagnosed when, during rest periods, the activity of the PFM was higher than 20% of the maximum voluntary contraction (Figure 4).

Statistical Analysis

Data were analyzed with the R software for statistical computing, and a *p*-value of <0.05 was considered statistically significant. Descriptive representations and tests were chosen to respect the non-normality of the variables and to maintain consistency. The odds ratio was estimated using the conditional maximum likelihood method.

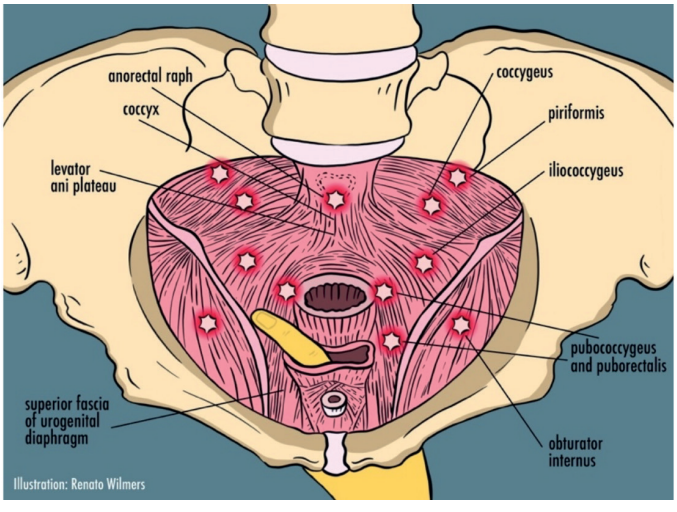

Figure 3. Pelvic pain mapping (illustration)

RESULTS

Descriptive Analysis

The proportion was the parameter chosen for the qualitative variables and the mean and interquartile range (first and third quartiles) were the parameters selected for the quantitative variables. The prevalence of HPF in women presenting with UI in our study was 17.2% (Table 1).

Group Comparison

Comparisons were made between patients with and without HPF in relation to the other variables studied. Data were analyzed using the Fischer and Mann-Whitney U tests for qualitative and quantitative measures, respectively. Statistical significance was set at $p<0.05$ (Table 2).

Women with an electromyographic diagnosis of HPF had an odds ratio 5.37 times higher (437%) of referring pain ($p=0.02$) and 5.6 higher (460%) of referring deep pain ($p=0.01$) during physical examination (Table 2).

Women with an electromyographic diagnosis of HPF had an odds ratio 5.37 times higher (437%) of referring pain ($p=0.02$), as shown in Figure 5; and 5.6 higher (460%) of referring deep pain ($p=0.01$), as shown in Figure 6, during physical examination.

Patients with HPF were also significantly younger ($p=0.02$), with a median age of 8.5 years less (40.5 years) than patients without HPF (49 years) is shown in Figure 7.

Women who underwent cesarean sections had a five times lower risk of HPF ($p=0.03$), as shown in Figure 8.

DISCUSSION

In the evaluation of the groups studied, part of the patients with UI presented with HPF and, amongst them, some also

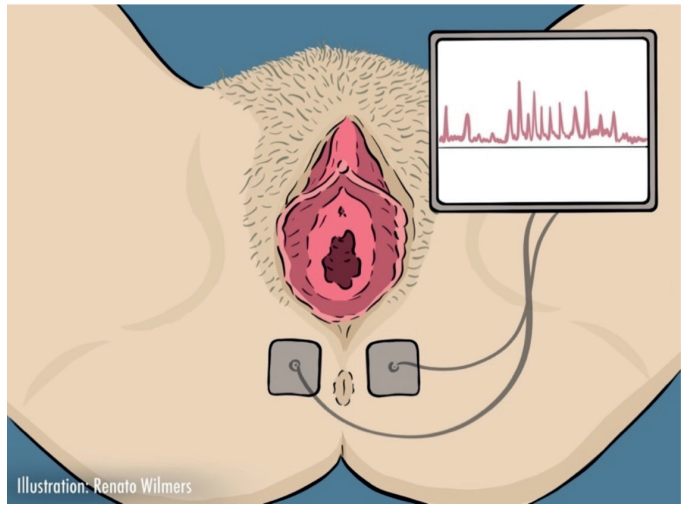

Figure 4. Electromyography during physical assessment (illustration)

Table 1. Baseline demographic and clinical characteristics			
Variable		**Number of volunteers**	**Proportion/median (Q1; Q3)**
Superficial pain	Yes	18	31.0%
	No	40	69.0%
Deep pain	Yes	15	25.9%
	No	43	74.1%
Presence of pain		20	34.5%
Hipertonic pelvic pain		10	17.2%
Age		55	47 (41; 52.5)
Type of UI	SUI	26	44.8%
	MUI	31	53.4%
BMI		55	26.75 (24.65; 30.02)
UTI (last year)		23	39.7%
Vaginal delivery		33	56.9%
Cesarean delivery		29	50.0%
Abortions		13	22.4%
Alcoholism		21	36.2%
Sedentarism		28	48.3%
Smoking		4	6.9%
Marital status	Married	38	65.5%
	Separated	9	15.5%
	Single	6	10.3%
	Widowed	2	3.4%
Ethnicity	Caucasoid	45	77.6%
	Mongoloid	3	5.2%
	Negroids	2	3.4%
Schooling	1 to 5 years	4	6.9%
	6 to 10 years	19	32.8%
	>10 years	33	56.9%
Income	<2	20	34.5%
	3 to 4	11	19.0%
	5 to 6	15	25.9%
	>6	7	12.1%

Q1; Q3: first and third quartiles; IU: incontinence urinary; SUI: stress urinary incontinence; MUI: mixed urinary incontinence; BMI: body mass index

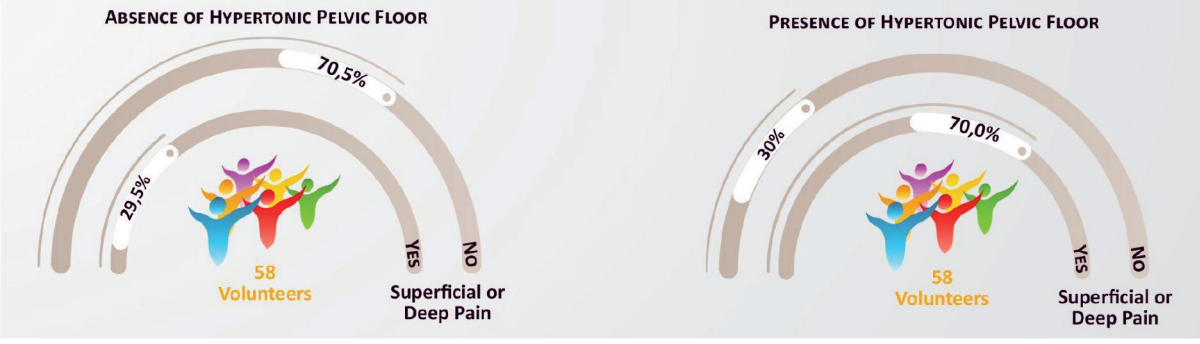

Figure 5. Comparison between groups: Presence of superficial or deep pain in patients with and without HPF (p=0.02)

HPF: hypertonic pelvic floor

Table 2. Group comparison-outcomes

Variable		Number of volunteers	Presence of hypertonic pelvic floor (n=10)	Absence of hypertonic pelvic floor (n=44)	p	OR (CI 95%)
Vaginal delivery		29	7 (70%)	22 (50%)	0.31	2.19 (0.43; 14.91)
Cesarean delivery		27	2 (20%)	25 (56.8%)	**0.03***	0.18 (0.02; 1)
Abortions		13	4 (40%)	9 (20.5%)	0.23	2.47 (0.42; 13.31)
Superficial pain		18	6 (60%)	12 (27.3%)	0.06	3.88 (0.77; 22.26)
Deep pain		15	6 (60%)	9 (20.5%)	**0.01***	5.6 (1.07; 33.39)
Presence of pain		20	7 (70%)	13 (29.5%)	**0.02***	5.37 (1.03; 37.24)
Age		51	40.5 (34.5; 46.75)	49 (41; 54)	**0.02***	
Type of IU	SUI	25	5 (50%)	20 (45.5%)	1	
	MUI	28	5 (50%)	23 (52.3%)		
BMI		51	26.95 (24.28; 28.87)	26.73 (24.61; 30.04)	0.85	
Marital status	Married	36	8 (80%)	28 (63.6%)	0.43	
	Separated	7	0	7 (15.9%)		
	Single	6	1 (10%)	5 (11.4%)		
	Widowed	2	1 (10%)	1 (2.3%)		
Ethnicity	Caucasoid	43	9 (90%)	34 (77.3%)	1	
	Mongoloid	2	0	2 (4.5%)		
	Negroids	1	0	1 (2.3%)		
Schooling	1 to 5 years	3	1 (10%)	2 (4.5%)	0.72	
	6 to 10 years	19	3 (30%)	16 (36.4%)		
	>10 anos	30	6 (60%)	24 (54.5%)		
Income	<2	18	4 (40%)	14 (31.8%)	1	
	3 to 4	11	2 (20%)	9 (20.5%)		
	5 to 6	14	3 (30%)	11 (25%)		
	>6	6	1 (10%)	5 (11.4%)		
Urinary infection (last year)		22	4 (40%)	18 (40.9%)	1	0.98 (0.17; 5.32)
Smoking		4	0	4 (9.1%)	1	0 (0; 6.81)
Alcoholism		21	4 (40%)	17 (38.6%)	1	0.94 (0.17; 4.71)
Sedentarism		26	6 (60%)	20 (45.5%)	0.5	1.71 (0.35; 9.47)

*p-value<0,05; IU: Incontinence urinary; SUI: stress urinary incontinence; MUI: mixed urinary incontinence; BMI: body mass index

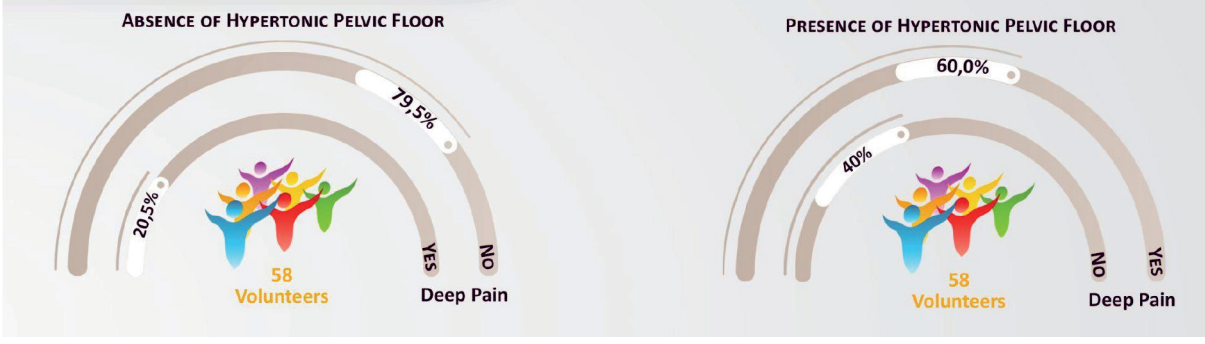

Figure 6. Comparison between groups: Presence of deep pain in patients with and without HPF (p=0.01)

HPF: hypertonic pelvic floor

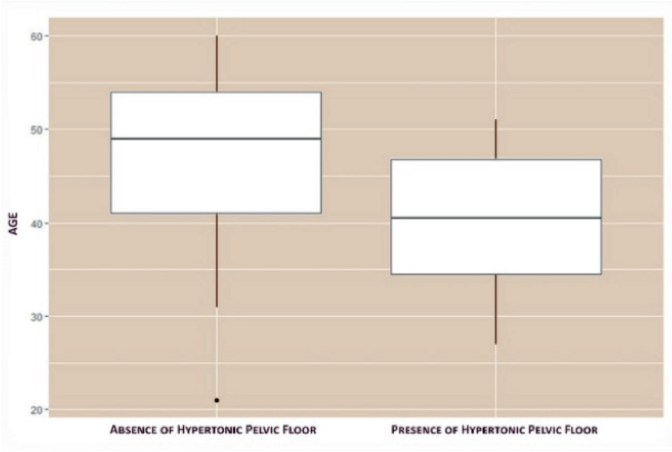

Figure 7. Patients with/without HPF-median age
HPF: hypertonic pelvic floor

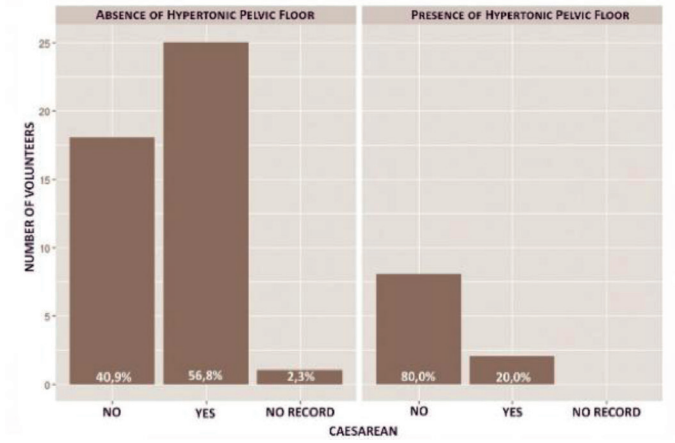

Figure 8. Comparison with/without HPF and cesarean sections
HPF: hypertonic pelvic floor

demonstrated pelvic pain, notably deep pelvic pain, in example, in the obturator internus muscle. As reported by Duckett et al.[1], patients with CPP submitted to the surgical correction of UI with synthetic mesh had a higher risk of developing persistent post-operative pain as a complication of the procedure.

It has been observed that when the PFM possess optimal tone and strength, pelvic organs are sustained with limited tension in the pelvic ligaments and fascia.[11,12] These PFM can become elongated during vaginal birth, weakened by aging or hypertonic with high stress levels, which eventually leads to pelvic floor dysfunctions.[13]

In our study, patients who had vaginal delivery had a 2.19x higher risk of presenting HPF in comparison to patients that had no vaginal delivery, even though these results were not statistically significant. All patients in our study had UI symptom, and the prevalence of HPF in our sample was 17.2%. Our data corroborate previous numbers described by Wallace et al.[13], in which a prevalence of 16% of HPF was observed in women with urinary incontinence, and it could be related to myofascial pain, dyspareunia, vulvodynia and vaginism.

As has been described by Meister et al.,[14] physical exam's methods for screening of myofascial pain of the pelvic floor are highly variable and sometimes poorly defined, which has led to the creation of a concise model of physical exam for that purpose that can be reproduced anywhere.

In this present study, evaluation of pain was classified as superficial or deep. The first one involving the following: Perineal body, bulbospongiosus and superficial transverse perineal muscles. In the other hand, deep pain was perceived when it was felt in the puborectalis muscles and the obturator internus muscle; being both closely related to the surgical technique of the UI procedure involving meshes.

CPP syndrome is defined as persistent pain in the pelvic area, lasting more than 6 months, substantial enough to limitate functionality and non-related to the menstrual cycle, pregnancy, local trauma or pelvic operations.[15] In our study, patients with HPF had a 5.37x higher chance of presenting pain (any type). The proportion of patients referring deep pain between groups was also statistically significant, where patients with HPF had a 5.6x higher chance of presenting deep pain, as opposed to patients without HPF.

Pain perceived in the PFM, connective tissue and adjacent fascia is named myofascial pelvic pain, and it is associated with muscular pain, tense bundles, and trigger points (a sensitive area in the muscle or connective tissue that becomes painful when pressed).[16] These trigger points can exist in other regions of the body, such as the suprapubic area, the inferior part of the abdomen, the lumbago (lower back), the inner thigh and the buttocks. It can be classified as a syndrome of its own and cause pelvic pain, or it can be related to other abdominopelvic pathologies. Due to lack of proper training in the physical exam of the PFM during medical residencies, this pathology has been historically underdiagnosed and, therefore, undertreated.[16]

Our study emphasized the physical and functional exam of the PFM, as well as standardized its evaluation, aiming at the correct patient's care and diagnosis.

Previous studies conducted through anamnesis and physical exam with patients complaining of CPP due to myofascial pain or trigger points localized in the pelvic floor found out that 13.2% of the patients had pain related to the PFM.[17] Pain perceived in the levator ani muscle for a period longer than 7 years was discovered in 22% of the women studied.[18] In another observational study with 48 healthy female volunteers and 108 women presenting CPP by Montenegro et al.[19] PFM sensitivity was an isolated finding in 15% of the sample, whereas it was

associated with other pathologies in 58.3% of the women versus 4.2% of healthy volunteers. In the CPP group, 89% of the women had sensitivity in the levator ani muscle; 50.8% presented it in the piriformis muscle and, at last, 31.7% had sensitiviy in the obturator internus muscle by the same authors.[19] The importance of this last muscle, the obturator internus, is that it is located on the topography of the suture stitch in the transobturator sling procedure, one of the most famous techniques for treatment of UI.

Persistent postoperative pain has in its main risk factors, identified in several studies, the younger age; previous history of preoperative pain; and psychological risk factors such as catastrophizing pain (situation in which there is tendency to describe the pain experience in a more exaggerated way than the average person, ignoring possible better outcomes) by Cameron et al.[5]

Our data corroborates the risk factors above: People with HPF were statistically younger than women without this condition (median age 8.5 years less than women without HPF). Women with HPF had a between 34.5 and 46.75 years, while patients without HPF had between 41 to 54 years.

After our study, it has become clear the need for a better way to evaluate patients through physical examination before undergoing surgery for the treatment of UI, as some pathologies of the pelvis and previous history of the patient may influence the postoperative period and, therefore, the success of the procedure and patient's quality of life.

The manuscript has a supplementary material: A video presenting the outcomes and suggested physical examination standardization for pelvic pain assessment (Supple Video).

CONCLUSION

The data suggest a correlation between the presence of HPF and CPP in patients with urinary incontinence. These subclinical diseases can be identified and treated in the preoperative period, minimizing the likelihood of being attributed to a complication of pelvic surgery and providing a better quality of life for the patient. We suggest more studies concerning this topic, with a larger sample size, and a standardized physical exam before surgery, aiming at the early diagnosis of these conditions.

ETHICS

Ethics Committee Approval: The research project was approved by the Research Ethics Committee of Faculdade Inspirar (opinion number: 1,833,987); and was approved by the Co-participant Institution, HC-UFPR-Hospital de Clínicas of Federal University of Paraná (opinion number: 2,520,073).

Informed Consent: Patients were previously informed about the objective of the study, agreed to participate, and signed a free and clarified consent form.

Peer-review: Externally peer-reviewed.

Contributions

Surgical and Medical Practices: D.B.; Concept: D.B., R.D.F., C.E.F.B., M.R.S.; Design: D.B., R.D.F., C.E.F.B., M.R.S.; Data Collection or Processing: D.B., C.E.F.B., C.V.M., M.R.S.; Analysis or Interpretation: D.B., R.D.F., C.V.M., M.R.S.; Literature Search: D.B., R.D.F., D.V., C.E.F.B., C.V.M.; Writing: D.B., D.V.

DISCLOSURES

Conflict of Interest: No conflict of interest was declared by the authors.

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Video Link: http://glns.co/2ok1a

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The use of functional luminal imaging probe (FLIP) for assessment of anal canal dimensions and resistance in normal controls, a cross sectional study

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ABSTRACT

Objectives: Fecal incontinence and obstructed defecation are two topics in the field of functional coloproctology that are not fully understood yet. Our study aims at measuring the anal canal length (ACL) and average anal canal diameter (ACD) using endo-FLIP. This is used to calculate the average anal canal resistance (ACR) in normal controls to set a reference level for diagnosis and treatment of patients with anal incontinence according to the flow-equation theory.

Materials and Methods: This was a cross-sectional study on forty normal volunteers. ACL, ACD and intra-balloon pressure, were measured in forty normal controls using the endo-FLIP. The ACR was measured using the flow calculator specially designed for this purpose using ACL and ACD.

Results: Forty volunteers 33 males and 7 females were included. Mean ACL during rest and squeeze were 3.04 cm and 3.24 cm respectively ($p<0.001$), Mean ACD during rest and squeeze were 7.18 mm and 7.07 mm respectively ($p=0.254$). Mean ACR at rest and squeeze were 9268.4 kg $m^{-1}s^{-}$ and 10302.83 kg $m^{-1}s^{-}$ respectively ($p=0.012$). Mean balloon pressure at rest was 31.39 mmHg and during squeeze was 51.57 mmHg ($p<0.001$).

Conclusion: Endo-FLIP is a novel technique used in measurement of ACL and ACD to calculate the resistance and this can set a reference level to be used in diagnosis and treatment of patients with anal incontinence.

Keywords: Anal canal length; anal canal diameter; anal canal resistance; endo-FLIP; flow equation; faecal incontinence and obstructed defecation

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INTRODUCTION

The ability to maintain fecal continence is a complex and balanced interaction between the anal sphincter complex, stool consistency, the rectal reservoir, ano-rectal sensation and the neurological innervation of the pelvic floor.[1] The intrinsic resistance offered by the anal canal to control the flow of the stools through its lumen had been suggested by many authors to be a more important factor in maintaining continence than just the contraction of the muscles to squeeze around the anal canal.[2,3] However, attempts to measure the anal canal resistance (ACR) using probes, catheters, small balloons, and obturators had been largely unsuccessful.[4,5]

According to the Poiseuille's, flow equation (flow=pressure/resistance). The recto-anal interaction can be further viewed as pressure/resistance interaction rather than pressure/pressure interaction.[6-8] By applying this equation to anal flow, the ACR can be calculated as being directly proportional to the dynamic viscosity (DV) or consistency of stools and the anal canal length (ACL), and inversely proportional to the anal canal diameter (ACD) and can be presented as follows,

$$\text{AC Resistance} = \frac{128 \times DV \times ACL}{3.14 \times (ACD)^4}$$

These parameters particularly the ACR can be examined by functional luminal imaging probe (FLIP). This technology facilitates the assessment of lumen size and sphincter distensibility in the gastrointestinal tract.[9] Endo-FLIP had been modified to provide detailed information about the length of the anal canal[10,11] and the resistance of the anal canal to distension. In one study the ACR to distension was significantly reduced in fecal incontinence.[11,12] Using of the endo-FLIP, intra-operatively, during colorectal surgery can provide detailed visualization of the anal canal geometry and these measurements can provide invaluable input to predict the surgical outcomes.[13]

The aim of our study was to use the endo-FLIP technology to simultaneously measure the length of the anal canal, the diameter of the anal canal and calculate the ACR in normal adult healthy controls in order to optimally characterize anal flow dynamics.

MATERIALS AND METHDOS

This is a cross-sectional study in which forty adults, volunteers were evaluated in the colorectal unit of the General Surgery Department of Cairo University in the period from November 2016 to June 2017. Using the endo-FLIP ACL and diameter were measured so that the resistance could be calculated per the flow equation.[8]

All volunteers provided written consent. The study was approved by the Local Research Ethics Committee of Faculty of Medicine Cairo University. The study is totally funded by Cairo University.

Volunteers were patients who presented to the colorectal unit for any general surgery complaints apart from ano-rectal complaints in the period. All of them had minor conditions such as lipomas, sebaceous cysts or Ingrowing toenails. Their preoperative work-up proved that they are otherwise healthy.

All the measurements were taken by the first author who is an expert professor in the field of colorectal surgery.

Inclusion Criteria

Volunteers from both sexes and all age groups with no colorectal disorders or previous anal surgery were included in the study and no other systemic disease.

Exclusion Criteria

Volunteers with previous anal surgery or any anal complaint (e.g., fecal incontinence, constipation) and patients with known or suspected systemic disease were excluded from this study.

Interventions

All volunteers went through proper history taking and full general and local examination to assess the tone and to identify any disorder. Incontinent patients were assessed and excluded using Wexner score.[9] Patients with constipation were assessed and excluded using Cleveland scoring system.[10]

The volunteers were prepared by a Saline rectal enema to evacuate the rectum completely half an hour before the test. The volunteers were examined in the left lateral position, with hips and knee flexed. Before using the system, any air was removed from the endo-FLIP (Figure 1) assembly by using an automated purge sequence and the system then was calibrated. The FLIP probe was inserted into the anal canal until the bag straddled the anal canal. The diameter of the FLIP probe without the balloon is 2.3 mm, the balloon is made of polyurethane, the length of the balloon 85 mm flat section 135 mm including the cones at each end. When balloon is fully inflated (volume 50 cc), its diameter is 25 mm. At 30 mm it is not fully inflated and will depend on the sphincter tightness, and other physical properties.

The FLIP bag was inflated to a small volume (30 mL), so that three distal measurements were seen on the FLIP display and ensure correct measurement taken. The probe was held in this position by an assistant. A snap shot of the anal canal was taken at rest.

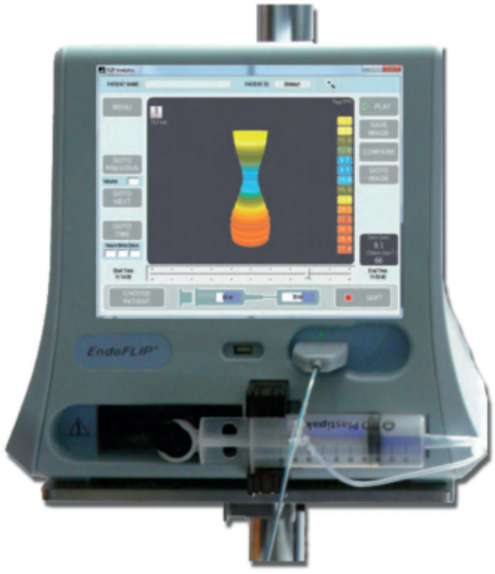

Figure 1. The enod-flip

The volunteer was then asked to squeeze and another snap shot was taken. Subsequently we compared the bio-mechanical changes between rest and squeeze as shown in Figure 2.

The length of the anal canal at rest and squeeze were calculated by the number of blue electrodes that are each located 0.5 cm apart. By using the calculator especially designed for this equation the resistance was calculated.[14] Look Figure 3.

Statistical Analysis

All collected data were checked for completeness and accuracy. Pre-coded data was entered on the computer using the statistical package of Social Science Software Program, version 21 (SPSS) to be statistically analyzed. Data was summarized using mean and standard deviation (SD) for quantitative variables, number and percent for qualitative variables. Comparison between

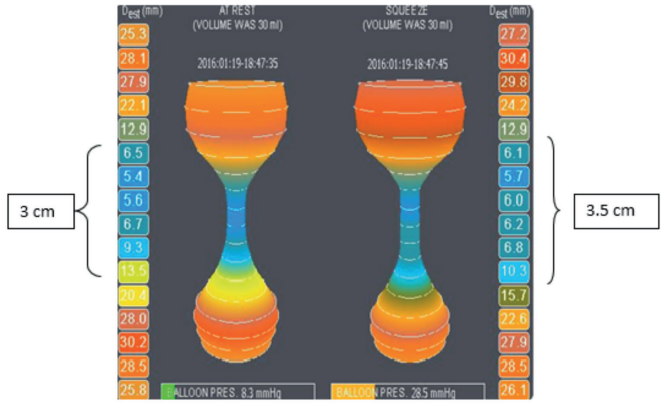

Figure 2. Anal canal length and diameter during rest and squeeze (blue segment)

quantitative variables were done using independent t-test and paired t-test for variables which were normally distributed. Non-parametric data were compared using Mann-Whitney U test and Wilcoxon test for quantitative variables which were not normally distributed. Spearman correlation was used to test for linear relations between variables. *P*-value less than 0.05 was considered of statistical significance.

RESULTS

In the example shown in Figure 2, the length of anal canal was 3 cm at rest and 3.5 cm during squeeze. Also, the average ACD was calculated (the sum of diameters/their number). So, in this patient the average ACD at rest was 7.7 mm and during squeeze was 7.7 mm. According to the modified flow equation shown in the introduction section the ACR was calculated.

Forty volunteers including 33 males and 7 females with a mean age of 41.63 years (SD =15.59), the minimum was 9 years the maximum was 75 years with a range 66 year. Six of the females were multiparous and one was nulligravida were evaluated in

Figure 3. Flow equation calculator

this study. The endo-FLIP measurements of the ACL and diameter and these data were used to calculate the resistance according to the flow equation.[9]

Mean age, mean ACL during rest and squeeze and mean ACD during rest and squeeze are shown in Table 1. Mean ACR at rest and squeeze are also shown in Table 1.

The ACL measured during rest was 3.04 cm (SD =0.41) and during squeeze was 3.24 cm (SD =0.44), which showed a statistically highly significant increase during squeeze (p<0.001).

The average ACD measured during squeeze was 7.18 mm (SD =0.63), while during squeeze was 7.07 mm (SD =0.45), which showed a statistically non-significant decrease during squeeze.

The ACR calculated during rest was 9268.4 kg $m^{-1}s^{-1}$ (SD =2813.07), while during squeeze it was 10302.83 kg $m^{-1}s^{-1}$ (SD =2725.46), which showed a statistically significant increase during Squeeze (p=0.012). This is shown in Table 1.

Correlations

The ACL at rest shows a positive correlation with resistance at rest with a p-value (0.015) which is statistically significant. The ACL during squeeze shows a positive correlation with resistance during squeeze with a p-value (0.041) which is statistically significant Table 2.

The ACD at rest shows a negative correlation with resistance at rest with a (p-value<0.001) which is statistically significant. The ACD during squeeze shows a negative correlation with the resistance during squeeze with a (p-value <0.001) which is statistically significant Table 3.

DISCUSSION

The endo-FLIP system uses a technique called impedance planimetry (IP) to characterize the geometry of the measurement area. IP is an established technique for performing measurements of cross-sectional areas in the alimentary tract.[15]

Here, we applied the endo-FLIP technology to characterize features of the anal canal. We found that the mean ACL during rest was 3.04 cm with standard deviation 0.41. The mean ACL during squeeze was 3.24 cm with SD 0.44, where the ACL showed a statistically highly significant increase during squeeze. The mean ACD at rest 7.18 mm with standard deviation 0.63. Mean ACD during squeeze 7.07 mm with standard deviation 0.45. The statistically significant difference between the AC resistance measured during squeeze between male and female patients in our study may be a false result due to the small number of the female patients recruited in the study "Type 2 error".

Shorvan et al.[16] used the defecography in measuring the length of the anal canal and it was 2.2 cm in men at rest and then increased by an average of 6 mm during squeeze to become 2.8 cm, and it was 1.6 cm in females that increased by 3 mm to become 1.9 cm during squeeze.

Likewise, Kang et al.[17] used water perfused ano-rectal manometry to measure the ACL and it was determined to be 3.8 cm, and by

Table 1. Showing ACL at rest and squeeze, ACD at rest and squeeze and anal canal resistance at rest & squeeze

	Age (years)	ACL during rest (cm)	ACL during squeeze (cm)	ACD during rest (mm)	ACD squeeze (mm)	Anal canal resistance rest (kg $m^{-1}s^{-1}$)	Anal canal resistance squeeze (kg $m^{-1}s^{-1}$)
Mean	41.63	3.04	3.24	7.18	7.07	9268.40	10302.83
SD	15.59	0.41	0.44	0.63	0.45	2813.07	2725.46
Range	66.00	1.50	2.00	2.80	1.90	10733.00	12408.00
Minimum	9.00	2.50	2.50	6.30	6.10	3930.00	4699.00
Maximum	75.00	4.00	4.50	9.10	8.00	14663.00	17107.00
P-value between parameters during rest and squeeze		<0.001		0.254		0.012	

SD: standard deviation; ACL: anal canal length; ACD: anal canal diameter

Table 2. Correlations between length and resistance

	Resistance rest		Resistance squeeze	
	r	p-value	r	p-value
ACL rest	0.100	0.538	0.382	**0.015**
ACL squeeze	0.253	0.116	0.324	**0.041**

ACL: anal canal length

Table 3. Correlations between diameter and resistance

	Resistance rest		Resistance squeeze	
	r	p-value	r	p-value
Average ACD at rest	-0.902	**<0.001**	-0.376	**0.017**
Average ACD at squeeze	-0.403	**0.010**	-0.865	**<0.001**

ACD: anal canal diameter

using high resolution ano-rectal manometry, the ACL was 2.4 cm.

Using solid state catheter Rao et al.[18] reported the ACL of average =3.7 cm, in a group of 45 healthy volunteers, including 19 males where ACL was average of 4 cm and 26 females where the ACL was average of 3.6 cm. A statistically significant difference between males and females.[18]

Using a 3D HRM, Coss-Adame et al.[19] reported the ACL to be 4.1 cm on a group made of 78 volunteers, including 36 males where the ACL was reported to be 4.3 cm, and 42 females where the ACL was reported to be 4 cm. There was no statistically significant difference between the ACL in males and females.[19]

In 2011, Olsen[20] use the endo-anal transducer to measure the mean ACL and it was found to be 3.28 cm in a group of nine women, and 2.57 cm in a group of 20 women, both groups consist of nulliparous women, and 2.3 cm in a group of 21 multiparous women, using the vaginal transducer the ACL measured 3.64 cm in the same 20 nulligravida women. It became 3.86 cm during the squeeze maneuver.[20]

In our study the length was 3.04 cm at rest and became 3.24 cm during squeeze. Then according to the flow equatio[6-8] the resistance was calculated

$$\text{AC Resistance} = \frac{128 \times DV \times ACL}{3.14 \times (ACD)^4}$$

The flow equation will be finally as follows:

$$\text{Flow} = \text{IRP (intra- rectal pressure)} \times \frac{3.14 \times (ACD)^4}{128 \times DV \times ACL}$$

Using the flow equation as a mathematic model in functional coloproctology, Farag[6-8] suggested that other mechanical factors are secondary factors operating through one or more of the above-mentioned primary factors. Type of food intake, amount of fluids ingested, rate of gastric emptying, small and large bowel absorption and motility, work through the DV factor. Rate of rectal filling, rectal capacity and rectal compliance work through the factor of intra rectal pressure, while the pelvic floor muscles, anal sphincters and pelvic supporting connective tissue and fascia work through the factors of ACL and ACD.[6-8]

The designed "flow equation calculator" was used in this study and the resistance was calculated to be as follow: The mean ACR at rest is 9268.4 kg $m^{-1}s^{-1}$ with standard deviation 2813.07 changed to 10302.83 kg $m^{-1}s^{-1}$ with standard deviation 2725.46 during squeeze with (p=0.012) which was statistically significant. The present study showed that ACR is directly proportional to ACL and inversely proportional to ACD.

The findings in the present study tends to establish a reference reading for the ACL, the ACD and the ACR in a control group in Egypt using endo-FLIP, for future assessment of patients suffering from anal incontinence and for intraoperative adjustment of anal sphincter repair or augmentation as was described by Farag.[13]

In this discussion section, we tried to discuss the previous studies that use similar or other devices to measure the anal canal dimensions and try to compare it to our measures, however we

Significance of the study:

How might it impact on clinical practice?

In the present work we measured the anal canal length, diameter and resistance in normal anal canals in controls in order to set a standard to be used intra-operatively for repair of the anal sphincter in patients suffering from anal incontinence due to sphincter causes.

What are the new findings?

1- Our study aims at measuring the anal canal length and average anal canal diameter hence measuring anal canal resistance using endo-FLIP.

2- This is a novel technique for detecting anal canal dimensions and calculating its resistance.

3- The endo-FLIP can be used in the assessment and adjustment of treatment of the incontinent and obstructed defecation as per the flow equation. The concept is explained in details in the cover letter.

What is already known about this subject?

1- Functional coloproctology is an area of major debate in medicine where the factors maintaining normal continence and defecation are still an unclear.

2- Our knowledge in functional coloproctology had been obtained from disseminated research data which increase confusion especially in the field of anal incontinence.

3- The major defect in the current research methodology lies in the lack of integration between the colon, the rectum and the anal canal which are highly integrated with each other and needs an integrated approach to assess their function.

think that the endo-flip gives a better idea of measurements and morphology of the anal canal.

Study Limitations

Small number of female volunteers due to difficulties in recruiting female volunteers in Egypt for such studies and the need to establish the standard measurements in each ethnic group and different ages.

CONCLUSION

Endo-FLIP is a novel technique in the detection of the ACL and ACD, Hence the resistance can be calculated by providing real time images. Furthermore, it can be used in diagnosis and management of cases with incontinence by adjusting ACL, ACD and AC.

Acknowledgments: This directed to Faculty of Medicine Cairo University who completely funded this research.

ETHICS

Ethics Committee Approval: The study was approved by the Local Research Ethics Committee of Faculty of Medicine Cairo University.

Informed Consent: All volunteers provided written consent.

Peer-review: Internally and externally peer-reviewed.

Contributions

Surgical and Medical Practices: A.F., M.M.R., H.A.B., A.N.M., M.Y.E.; Concept: A.F., M.Y.E.; Design: A.F., M.M.R., H.A.B., A.N.M., M.Y.E.; Data Collection or Processing: A.F., M.M.R., H.A.B., A.N.M., M.Y.E.; Analysis or Interpretation: A.F., M.M.R., H.A.B., A.N.M., M.Y.E.; Literature Search: A.F., M.M.R., H.A.B., A.N.M., M.Y.E.; Writing: A.F., M.M.R., H.A.B., A.N.M., M.Y.E.

DISCLOSURES

Conflict of Interest: No conflict of interest was declared by the authors.

Financial Disclosure: The authors declared that this study received no financial support.

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ORIGINAL ARTICLE

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Endosonographic variations in thickness of anal sphincters in patients with hemorrhoids and normal population

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ABSTRACT

Objectives: The literature lacks enough research about the condition of the anal sphincters in patients with hemorrhoids. The aim of this study was to assess the thickness of internal and external anal sphincters (EAS) in patients with hemorrhoids using 3-dimensional endoanal ultrasonography.

Materials and Methods: This cross-sectional study non-randomized comparative study included 75 patients with internal hemorrhoids of 3rd and 4th degree and 75 healthy individuals as a control group. Endoanal ultrasound examination was done for all participants. The mean thickness of the internal anal sphincter (IAS) and EAS was measured (in mm) at the mid part of the anal canal at rest and during straining (pushing).

Results: Concerning IAS, its thickness during rest was apparently higher in the hemorrhoids group compared to the control group (p=0.071), and comparable in the two groups during push (p=0.175), so It did not change significantly with push in the two groups. The hemorrhoids group had significantly thicker EAS compared to the control group during rest and on push (p=0.025, and 0.022, respectively). Pushing resulted in a significant increase in the thickness of EAS in the control group (p=0.004), but not in the hemorrhoids group (p=0.132).

Conclusion: In hemorrhoidal disease, IAS and EAS are thickened during rest, but the EAS doesn't increase in thickness as occurring in control group in face of increased tension inside the anal canal during pushing. This may suggest a new pathophysiology for hemorrhoids as being a mechanism which developed to increase the thickness of the wall to protect anal canal wall from increased tension during push.

Keywords: Hemorrhoids; sphincters; endoanal ultrasound; pathophysiology

INTRODUCTION

Hemorrhoidal disease is one of the most common colorectal complaints in gastroenterology clinics. Worldwide, the prevalence of symptomatic hemorrhoids is estimated at 4.4% in the general population.[1] One-fourth of those patients consult a surgeon. Hemorrhoids are normally present in healthy individuals as fibrovascular cushions lining the anal canal. These cushions are considered sinusoids because some do not contain muscular

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walls. Physiologically, hemorrhoids protect the anal sphincter muscles and enhance anal canal closure during increased abdominal pressure.[2] The term "hemorrhoid" is commonly used to describe the pathologic hemorrhoid disease instead of the normal anatomic structure.[3] In about 40% of cases, hemorrhoids are asymptomatic.[4] In symptomatic cases, patients commonly complain of bleeding solely or with defecation, swelling, rectal pain, perianal irritation, hemorrhoidal protrusion and mucous discharge.[3] The exact pathophysiology of hemorrhoidal development is not clear. One theory, the sliding anal canal lining, suggests that hemorrhoids are an abnormal downward displacement of the anal cushions causing venous dilatation due to weakening of their supporting tissues.[5] In patients with hemorrhoids, some physiological changes of the anal canal have been observed. The resting anal pressure was higher in patients with hemorrhoids without significant change of the internal sphincter thickness.[6] Before hemorrhoidectomy, patients with hemorrhoids had lower rectal compliance, and more perineal descent in addition to high resting anal pressures. These changes reverted to the normal range within 3 months after surgery.[7] Farag suggested that the presence of an abnormality in the anal sphincter during push can lead to hemorrhoids development, as a protective mechanism to resist the increased anal canal wall tension.[8] Later it becomes pathologic when it starts to bleed, protrude, become inflamed or develops thrombosis.[8]

The literature is lacking enough research about the condition of the anal sphincters in patients with hemorrhoids. Endoanal ultrasonography (EAUS) is a well-tolerated and straight forward technique. It is commonly used now for the evaluation of the internal anal sphincter (IAS) and the external anal sphincter (EAS) in cases with fecal incontinence.[9]

The aim of this study is to utilize the availability of 3-dimensional EAUS for assessment of the thickness of internal and EASs in patients with hemorrhoids in comparison to healthy individuals.

MATERIALS AND METHODS

This cross-sectional non-randomized comparative study included 75 patients with hemorrhoids (3rd and 4th degree) and 75 healthy individuals as a control group. Patients and controls were recruited from the Outpatient Clinic of the Colorectal Unit in Kasr-El-Aini Hospital from May 2018 to October 2019. The study was approved by the scientific and Ethical Committee of the General Surgery Department. The procedure and was thoroughly explained to all individuals participating in the study and all of them consented to participate in the study. Patients were included if they had internal hemorrhoids of 3rd and 4th degree with no history of previous anal surgery nor concomitant anal disease (e.g., anal fissure). The control groups included individuals with no history of previous anal surgery nor or concomitant anal disease. After full history taking and thorough clinical examination, all participants had an enema half an hour before examination. With the participant in the left lateral position, digital rectal examination and proctoscopy were done to assess the degree of piles and to detect any concomitant disease which may exclude the case from the study. This was followed by endoanal ultrasound examination (Flex Focus 400 - type 1202 - endoanal ultrasound device) B & K from Denmark. The whole anal canal is depicted using 2D and 3D images. The thickness of the internal and EASs was measured (in mm) at the mid part of the anal canal at 3, 6, 9, 12 o'clock positions. Then, the mean was calculated (Figure 1, 2).

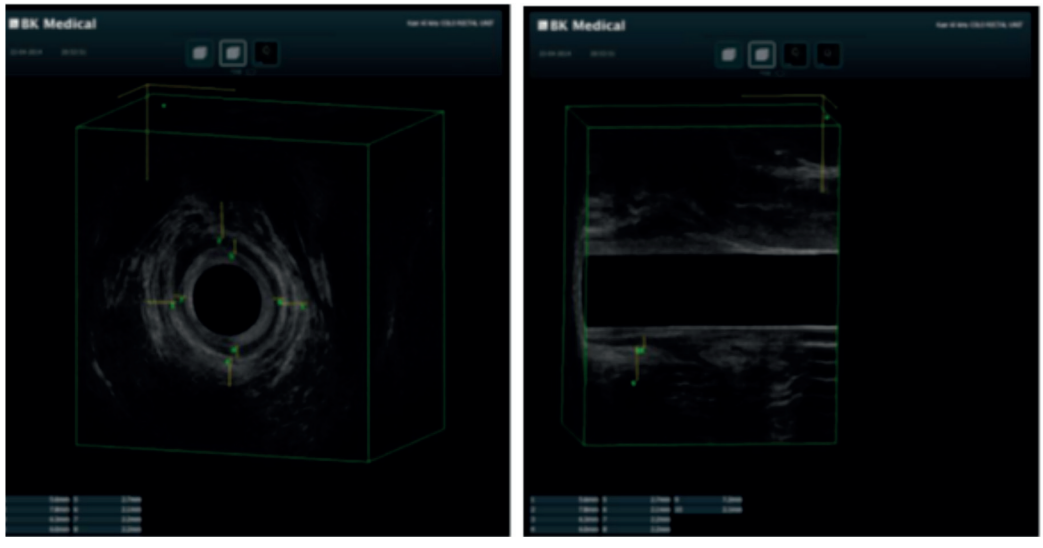

Figure 1. Internal and external anal sphincter thickness in control patient (during rest)

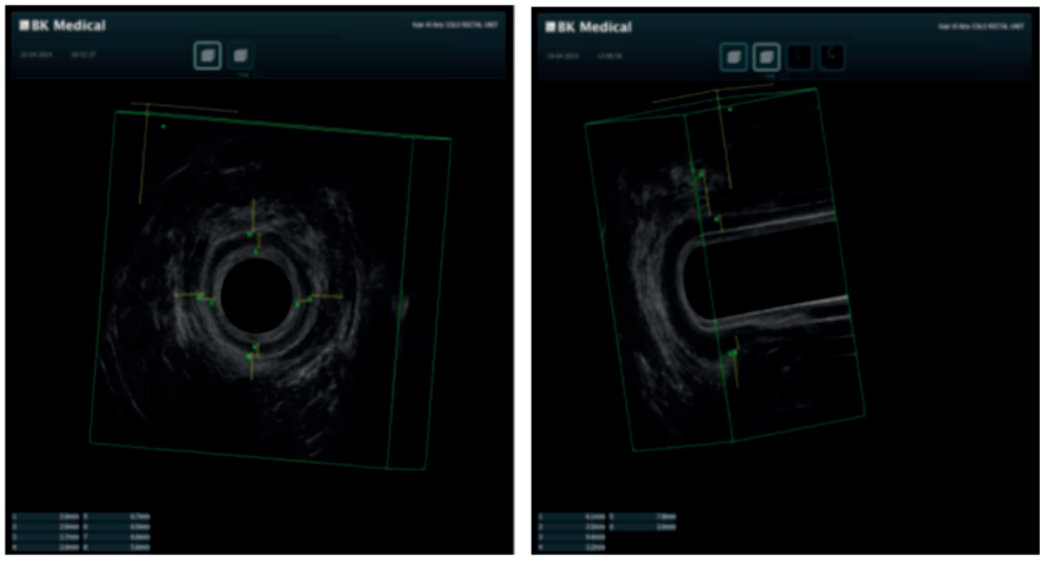

Figure 2. Internal and external anal sphincter thickness in patient with hemerrhoids (during rest)

The patient is asked to push "strain" and then the mean thickness of the internal and EAS during push was measured as previously described (Figure 3, 4). The mean thicknesses of internal and external sphincters in both groups were compared.

Statistical Analysis

All statistical calculations were done using computer programs SPSS (Statistical Package for the Social Science; SPSS Inc., Chicago, IL, USA) version 15 for Microsoft Windows. Data were described as a mean and standard deviation. Comparison of numerical variables between the study groups was made using Mann-Whitney U test. A p-value <0.05 was considered significant.

RESULTS

The two groups were comparable regarding gender. The mean age of the patients group was 39.2 years (range: 22-54 years) and 37.9 years (range: 21-53 years) for the control group ($p=0.76$). The diagnosis of control group individuals was a hernia in 60% (45 cases), chronic calcular cholecystitis in 20% (15 cases), simple nodular goiter in 20% (15 cases) of them. Sixty percent of the patients had third-degree hemorrhoids, while 40% had fourth-degree disease. The thickness of the IAS during rest was apparently higher in the hemorrhoids group compared to the control group, but the difference was not statistically significant ($p=0.071$). During push, the thickness of the IAS was comparable in the two groups (Table 1). There was no significant change of

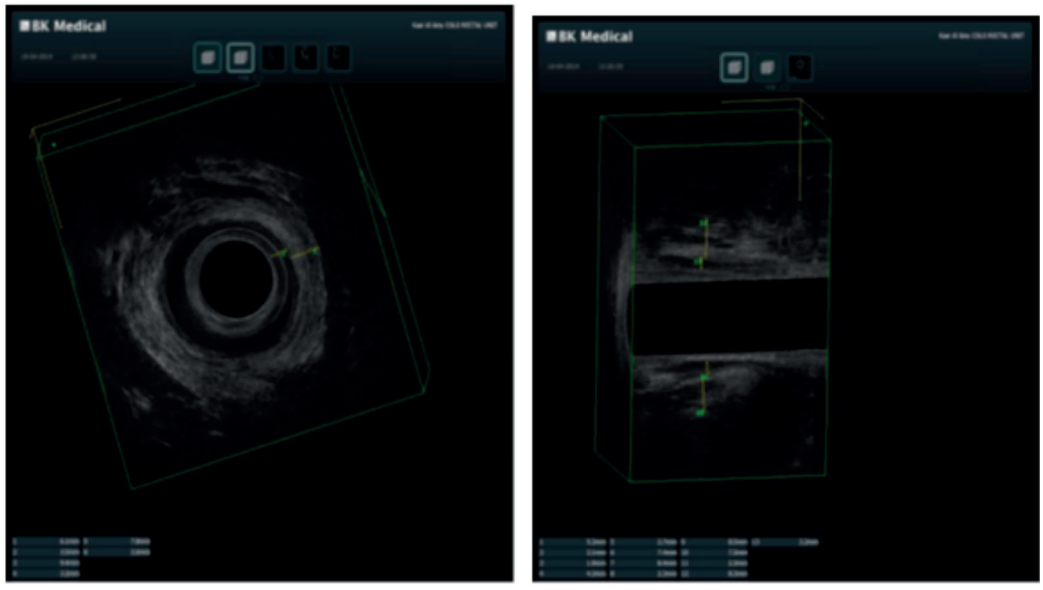

Figure 3. Internal and external anal sphincter thickness in control patient (during push)

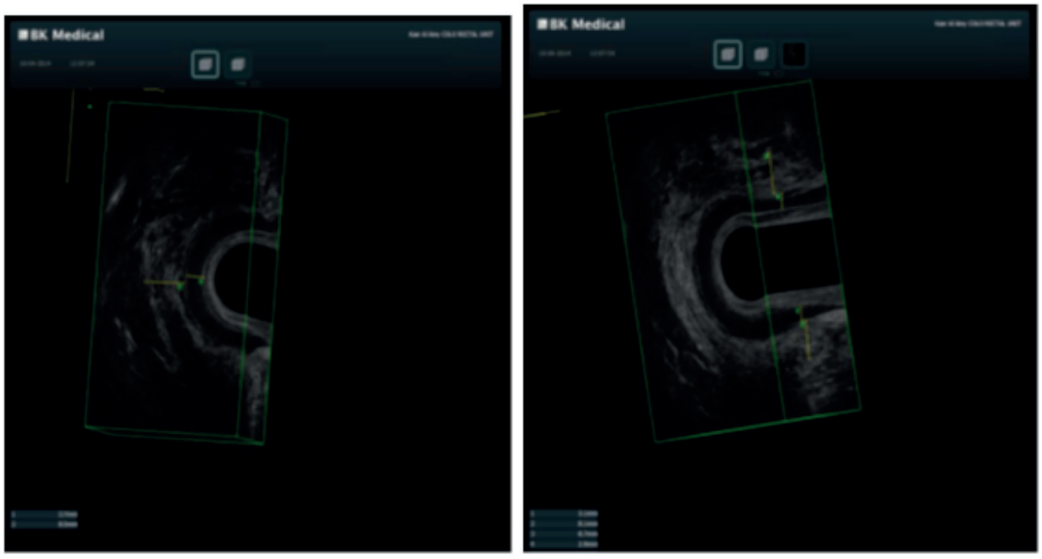

Figure 4. Internal and external anal sphincter thickness in a patient with hemerrhoids (during push)

Table 1. Thickness of the internal and external anal sphincters measured with endoanal ultrasonography in the hemorrhoids and control groups

	Hemorrhoids group (n=75)	Control group (n=75)	*p*-value*
Internal sphincter thickness (mm)			
During rest	2.4±0.5	2.1±0.4	0.071
During push	2.4±0.5	2.1±0.4	0.175
p-value§	0.243	0.310	-
External sphincter thickness (mm)			
During rest	6.6±1.1	5.7±0.9	0.025
During push	6.9±0.9	6.2±0.7	0.022
p-value§	0.132	0.004	-

*Comparison of the two group; §comparing measurements during rest and push

the thickness of the IAS with push in the two groups. Conversely, the hemorrhoids group had significantly thicker EAS compared to the control group during rest and on push (Table 1). Pushing resulted in a significant increase in the thickness of EAS in the control group (p=0.004), but not in the hemorrhoids group (p=0.132).

DISCUSSION

Anatomy and physiology of the anal canal are quite complex. EAUS is a valuable technique for evaluation of the anal sphincters and pelvic floor in patients with anorectal diseases.[10] The introduction of three-dimensional endosonography added new potentials in the diagnosis of anorectal diseases. Volume reconstruction of axial images can precisely present the anatomy of the anal canal and anal sphincters. Several articles described the use of EAUS in cases of anal sphincter defects,[11] anal fistulas,[12] perianal abscesses,[13] and anal tumors.[14] However, we found only a single study in the literature that studied anal sphincter anatomy in patients with hemorrhoids. The current study was designed to address the anatomy of anal sphincters in patients with hemorrhoidal disease in comparison to healthy subjects using three-dimensional endosonography. The study demonstrated that EAS thickness is significantly increased during straining in healthy subjects, but not in patients with hemorrhoids. Also, patients with hemorrhoids had significantly thicker EAS compared to normal subjects.

The flow equation and hybrid law[15] can explain the findings of the current study. According to the equation and the results of the present study, the anal canal wall thickness has to increase proportionately to protect the anal canal against the increasing wall tension. Hemorrhoids can be viewed as a trial to protect the bowel wall against increased tension by increasing the size of the anal cushions, as in these patients, the significantly thickened external sphincter in patients with hemorrhoids during rest, while it was not significantly thicker during push. This may suggest that hemorrhoid patient had already exhausted their

reserve by increasing the thickness of the wall and then develop hemorrhoids to compensate for increasing tension during defecation.

In the current study, the EAS was thickened in patients with hemorrhoids which might indicate increased activity of this sphincter. This increase in EAS thickness was suggested by Farag[15], is due to work hypertrophy in patients with hemorrhoids due to premature straining before full relaxation-thickening of the EAS as is seen in normal controls is evident by our results which show significant difference in thickness of external sphincter between hemorrhoid and control group (p=0.022). In the hemorrhoid patient group the increase in the EAS thickness during push was not significant (p=0.132) which may suggest that hemorrhoid patient had already exhausted their reserve in increasing the thickness of the wall and then develop hemorrhoids to compensate for increasing tension during defecation.[15]

This high anal canal wall tension may results in reflex spasm of anal sphincters which may lead to hypertrophy of the external sphincter muscle. This hypertrophy may lead to hemorrhoids by impairment of venous drainage of the hemorrhoidal venous plexus in patients predisposed to hemorrhoids by lax anal mucosa and congenitally weak mesenchyme. Those hemorrhoids will further increase the anal canal wall thickness, which will protect the anal canal wall in face of increased anal canal wall tension during defecation.

CONCLUSION

We conclude that the hemorrhoids develop as a protective mechanism to protect the anal canal against excessive tension during straining especially if the patient starts to strain before full relaxation-thickening of the EAS during defecation. As a result of this increased wall tension, the IAS showed a slight but not significant thickening in patients with hemorrhoids, while the EAS is significantly thicker in these patients. Behavioral instructions and education should be an integral part of treatment of hemorrhoids, which should aim at normal urgency defecation, i.e., to reply to the call of nature rather than to obsessively strain to induce it.

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ETHICS

Ethics Committee Approval: The study was approved by the Research Ethics Committee of Cairo University on February 2018.

Informed Consent: Informed consent was obtained.

Peer-review: Internally and externally peer-reviewed.

Contributions

Surgical and Medical Practices: A.F., H.MS.M., AR.N.M., O.R., M.Y.E.; Concept: A.F., Design: A.F., H.MS.M., AR.N.M., O.R., M.Y.E.; Data Collection or Processing: A.F., H.MS.M., AR.N.M., O.R., M.Y.E.; Analysis or Interpretation: A.F., H.MS.M., AR.N.M., O.R., M.Y.E.; Literature Search: O.R., M.Y.E.; Writing: A.F., H.MS.M., AR.N.M., O.R., M.Y.E.

DISCLOSURES

Conflict of Interest: No conflict of interest was declared by the authors.

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Perioperative outcomes of robotic versus laparoscopic sacrocolpopexy

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ABSTRACT

Objective: To compare the perioperative outcomes of robotic-assisted sacrocolpopexy (RSCP) versus conventional laparoscopic sacrocolpopexy (LSCP).

Materials and Methods: A retrospective cohort of 68 patients underwent conventional LSCP or RSCP at Acıbadem Maslak University Hospital between May 2010 and June 2019. Data on demographic and surgical characteristics and peri- and postoperative outcomes were examined. The primary outcomes were operative time and postoperative complication rate. The secondary outcomes were postoperative pain score, pre- and postoperative hemoglobin values, body mass index, readmission rate, length of hospital stay, and incidence of intraoperative complication. The Kolmogorov-Smirnov goodness-of-fit test, t-test, Mann-Whitney U test, chi-square test, and Fisher's Exact test were used, and Spearman correlation analysis was performed.

Results: In total, 68 patients were evaluated (LSCP, n=52; RSCP, n=16). The RSCP group (204.88±54.97 min) had a longer operative time than the LSCP group (142.1±35.32 min) (p<0.001). The rates of early postoperative complications (such as desaturation, oliguria, and nausea) were 31.3% in the RSCP group and 5.8% in the LSCP group (p=0.015). The postoperative pain scores did not significantly differ between the LSCP group (3.9±1.64) and the RSCP group (3.38±1.54) (p=0.256). Further, there was no significant difference between the two groups in terms of pre- and postoperative hemoglobin values, demographic characteristics, readmission rate, incidence of intra- and postoperative complications (such as mesh erosion, voiding difficulty, fistula, and recurrence), and length of hospital stay.

Conclusion: LSCP may be superior to RSCP. However, the surgical route should be individualized based on the surgeon's experience and the clinic's resources.

Keywords: Sacrocolpopexy; pelvic organ prolapse; laparoscopy; robotic surgery

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INTRODUCTION

Pelvic organ prolapse (POP) is a condition that often affects women, particularly those with risk factors such as advanced age, history of interventional birth, menopause, and family history of POP.[1] The rate of POP surgery ranges from 11% to 19%.[2,3] Sacrocolpopexy (SCP) is the gold standard procedure for apical prolapse. SCP can keep the vagina and uterus in the correct anatomical position with mesh tapes. Although SCP was initially performed with the abdominal and vaginal approach, minimally invasive techniques, such as conventional and robotic-assisted laparoscopy, are commonly preferred to date.[4] Compared with sacrospinous ligament fixation, SCP is associated with a lower incidence of dyspareunia and a higher success rate.[4,5] In a meta-analysis performed by De Gouveia De Sa et al.[6], there was no significant difference in terms of anatomical outcomes, mortality rate, length of hospital stay, and postoperative quality of life. However, robotic-assisted sacrocolpopexy (RSCP) is correlated with a longer operative time and a higher level of postoperative pain.[6]

The current study aimed to retrospectively assess the perioperative outcomes of conventional laparoscopic sacrocolpopexy (LSCP) and RSCP and compare data with previous studies.

MATERIALS AND METHODS

During the study period, 97 patients underwent SCP, and 29 patients were excluded due to lack of data. The data of 68 patients who underwent LSCP or RSCP at our department between May 2010 and June 2019 were collected retrospectively from the patient files. Details on demographic characteristics [such as age and body mass index (BMI)], surgical indications, menopause status, type of surgery performed and mesh used, peritoneum closure, pre- and postoperative hemoglobin values, volume of intraoperative blood loss, operative time, postoperative pain, and complications (such as fever, rectovaginal fistula, incontinence or cystosel, micturation difficulties, bladder overactivity, globe vesicale, ileus, vault prolapse, bleeding, and mesh complications) were evaluated.

This study was approved by the Medical Ethics Committee of the Institutional Ethical Review Board of Acıbadem Mehmet Ali Aydınlar University Faculty of Medicine (ATADEK-2022-16/03).

SCP was performed on patients with POP. Transobturatuar tape (TOT) was used in patients with accompanying stress incontinence and urethral hypermobility. Colporrhaphy anterior and posterior surgeries were conducted if cystocel and rectocel were observed.

All surgeries were performed by the same surgeon. The surgical route (either LSCP or RSCP) was selected according to clinical findings and the surgeon and patient's preference.

All patients received general anesthesia, and they were placed in the lithotomy position at a Trendelenburg angle of 30°. After sterilization with iodine and draping, a Foley catheter was inserted. VCare® (©2022 CONMED Corporation) uterine manipulator was used in all uterin prolapse cases. The pneumoperitoneum was then established up to 14 mmHg, with carbon dioxide insufflation throughout surgery.

In LSCP, a 10-mm umbilical trocar, two lateral 5-mm trocars, and a 5-mm suprapubic trocar were used. Further, a 10-mm laparoscope was utilized for visualization. Ultrasonic and integrated bipolar instruments (Thunderbeat Olympus Medical Systems Corporation of America, 3500 Corporate Parkway, Center Valley, PA 18034, the USA) were used for vessel sealing and dissection. Meanwhile, non-articular instruments were applied together.

RSCP was performed using the da Vinci Xi Surgical System (Intuitive Surgical, Sunnyvale, CA). An 8-mm umbilical port, two 8-mm right and left ancillary ports, and a 12-mm smoke evacuator (Airseal®; SurgiQuest, Inc.) were used.

In our clinic, both hysterectomy and SCP were performed similar to other methods in the literatüre.[7-9] The peritoneum was excised from the upper level of the promontory to the recto-uterine space to create a suitable area for the mesh. The peritoneum surrounding the uterus was incised. The anterior and posterior vaginal wall was dissected to secure the mesh. The bilateral ureters were visualized to prevent injury. In patients with vaginal vault prolapse or those who had hysterectomy simultaneously, the bifurcated side of the mesh was sutured to the vesicovaginal and prerectal space and the anterior and posterior vaginal vault. Meanwhile, it was sutured to the anterior and posterior parts of the uterus in patients with preserved uterus. The non-bifurcated part of the mesh was fixated to the anterior longitudinal ligament along the sacral promontory. The prevertebral parietal peritoneum was vertically incised in all cases. At the end of the surgery, the peritoneum was closed with a 2/0 polyglactin 910 running suture in all cases. The urinary catheter was removed after 24 h.

Different suture materials, such as 1/0 or 2/0 polyglactin 910 suture (Coated Vicryl™, Ethicon), 2/0 polypropylene (Prolene™, Ethicon), and 2/0 polyglycolic barbed suture (2-0, V-Loc™, 180 wound closure device, Covidien, Mansfield, the USA), were used to suture the mesh to the vagina or uterus. Simultaneously, the other end of the mesh was fixed to the promontory either with the same sutures or with a tacker (The EndoFast Reliant™, IBI Medical, Caesarea, Israel). The EndoFast Reliant™ SCP mesh or the custom-made non-absorbable 5*2-cm polypropylene Y-mesh was utilized.

Pre- and postoperative hemoglobin and hematocrit values were compared to evaluate the volume of blood loss. The preoperative blood count was analyzed 24-48 h before the surgery. Meanwhile, postoperative blood count analysis was performed 24 h after surgery.

In one patient, a drain was placed in the abdomen and was removed on postoperative day 1.

Low-molecular-weight heparin was administered to patients who had risk factors for embolism.

The operative time was calculated as the time between intubation and extubation by the anesthesia team. The length of hospital stay was defined as the time between the patient's hospitalization before the surgery and the day of discharge.

Early complications were defined as complications occurring within the first week postoperatively. Late postoperative complications were divided into three groups based on time of occurence (within the first year after surgery, between 1 and 3 years, and after the third year).

The patients came to their first controls between the 7th and 10th postoperative days. Subsequent controls were performed between the 3rd and 6th months postoperatively.

Statistical analysis

Continuous variables were expressed as mean ± standard deviation and/or median (minimum-maximum) and categorical variables as numbers and percentages. Normality analyses of continuous variables were performed using the Kolmogorov-Smirnov goodness-of-fit test. For normally distributed data, an independent sample t-test was used to compare the clinical outcomes and scores between the groups. When the distributions were not normal, the Mann-Whitney U test was used to compare these variables. Categorical data were compared with the chi-square test and Fisher's Exact test. The linear association between variables was assessed via Spearman correlation analysis. All data were evaluated using the Statistical Package for the Social Sciences software version 26.0 (IBM Corporation, Armonk, NY, the USA). A *p*-value of <0.05 was considered statistically significant.

Table 1. Demographic characteristics of the patients

		Robotic-assisted sacrocolpopexy group (n=16)	Laparoscopic sacrocolpopexy group (n=52)	*p*-value
Age	**Mean ± SD**	61±10.95	61.77±8.77	0.774***
Body mass index	**Mean ± SD**	26.86±3.88	27.58±4.84	0.549***
Parity	**Multiparity**	15 (93.8%)	52 (100%)	0.235**
	Nulliparity	1 (6.3%)	0 (0.0%)	
Menopause	**Yes**	13 (81.3%)	47 (90.4%)	0.612**
	No	2 (12.5%)	4 (7.7%)	
Menopause duration (years)	**Mean ± SD**	12.29±7.87	13.13±9.29	0.760***
Hormone replacement therapy (HRT)	**Yes**	0 (0%)	4 (7.7%)	0.566**
	No	16 (100%)	48 (92.3%)	
HRT duration (years)			6.5±5.05	
Concomitant disease	**Yes**	12 (75%)	39 (75%)	1.000**
	No	4 (25%)	13 (25%)	
Number of vaginal births	**1**	3 (18.8%)	9 (17.3%)	0.246*
	2	8 (50%)	35 (67.3%)	
	3	5 (31.3%)	6 (11.5%)	
	4	0 (0%)	2 (3.8%)	
Previous history of hysterectomy	**Yes**	1 (6.3%)	11 (21.2%)	0.268**
	No	15 (93.8%)	41 (78.8%)	
Previous history of surgery for urinary incontinence	**Yes**	0 (0%)	6 (11.5%)	0.323**
	No	16 (100%)	46 (88.5%)	
Previous history of surgery for pelvic organ prolapse	**Yes**	0 (0%)	6 (11.5%)	0.323**
	No	16 (100%)	46 (88.5%)	

*chi-square test; **Fisher's Exact test; ***t-test in the independent groups; ****Mann-Whitney U test; SD: standard deviation

RESULTS

The robotic surgery technique was used in 16 of 68 patients evaluated within the scope of the study and the laparoscopic surgery technique in 52 patients. The LSCP group (61.77±8.77 years) was older than the RSCP group (61±10.95 years). However, the results did not significantly differ (p=0.774).

There was no significant difference in the proportion of multiparous women in the RSCP group (93%) and the LSCP group (100%) (p=0.235).

The LSCP group (27.58±4.84 kg/m^2) had a greater BMI than the RSCP group (26.86±3.88 kg/m^2). However, the results did not significantly differ (p=0.549). Table 1 shows the demographic characteristics of patients.

The RSKP group (204.88±54.97 min) had a significantly longer operative time than the LSCP group (142.1±35.32 min) (p<0.001). In addition, there was a significant difference in the incidence of early postoperative complications (such as desaturation, oliguria, and nausea) between the RSCP group (31.3%) and the LSCP group (5.8%) (p=0.015).

The LSKP group (3.9±1.64) had a higher postoperative pain score than the RSKP group (3.38±1.54). Nevertheless, the results did not significantly differ (p=0.256).

There was no significant difference in terms of pre- and postoperative hemoglobin and hematocrit values; BMI; parity; presence and duration of menopause; hormone replacement rates; presence of concomitant disease; rates of vaginal delivery, previous hysterectomy/incontinence and/or prolapse surgery, readmission, and concomitant hysterectomy/TOT/colporrhaphy; incidence of postoperative complications, length of hospital stay; peritoneum suturing; and type of suture materials used between the two groups.

None of the patients presented with intraoperative complications. Conversion to open surgery was not required in any of the cases.

In terms of early postoperative complications, desaturation was observed in four (5.8%) patients, leg pain in one (1.4%), oliguria in one (1.4%), nausea and dizziness in one (1.4%), and throat ache in one (1.4%). Regarding late postoperative complications, rectovaginal fistula was observed in one (1.4%) patient, incontinence in two (2.9%), cystocele in three (4.4%), micturation difficulty in one (1.4%), bladder overacitvity in one (1.4%), globe vesicale in one (1.4%), ileus in one (1.4%), vaginal vault prolapse in one (1.4%), and mesh erosion in one (1.4%). Only one patient in the LSCP group underwent secondary surgery for postoperative complication (ileus). Table 2 depicts the clinical outcomes of patients.

The LSCP group (80%) had a higher postoperative complication rate within the first year than the RSCP group (33.3%). However, the RSCP group had higher complication rates between 1 and 3 years and after 3 years than the LSCP group. However, the results did not significantly differ (p=0.120) (Table 3).

In the RSCP group, none of the patients with tacker, which was used to fix the mesh to the promontory, developed late postoperative complications. Meanwhile, two (12.5%) patients with sutures had late postoperative complications. However, the results did not significantly differ (p=0.500). On the contrary, in the LSCP group, patients with tacker had a higher late postoperative complication rate than those with sutures (12.5% and 3.6%, respectively). However, the results did not significantly differ (p=0.324).

In our study, the readmission rates due to postoperative complications in all patients were compared according to the suture material used for the vaginal vault. The readmission rates were 63.6% in patients with 1/0 polyglactin 910 suture, 18.2% in those with 2/0 polypropylene suture, and 18.2% in those with 2/0 polyglycolic barbed suture. None of the patients with 2/0 polyglactin 910 suture were readmitted. Although the differences were not statistically significant, the differences were very close to the statistical significance limit (p=0.051).

The RSCP (1.81±0.54) and LSCP (1.75±0.71) groups did not significantly differ in terms of length of hospital stay (p=0.565).

DISCUSSION

Although SCP is the gold standard treatment particularly for apical prolapse, the surgical method that should be used differs based on the conditions of the clinic, patient's condition, and surgeon's preference. To date, the trend toward minimally invasive surgery has increased the rate of LSCP and RSCP.[10-12] Minimally invasive surgery is preferred because it is associated woth lesser pain, faster recovery time, and shorter hospital stay. However, previous studies comparing conventional LSCP and RSCP are limited.[8,13] Therefore, the current study aimed to compare the perioperative outcomes of LSCP and RSCP.

Tan-Kim et al.[13] showed that RSCP is longer by almost 75 min than LSCP. Hence, the cost will be high. Although out study did perform cost comparison, the operative time of RSCP was longer by approximately 63 min than that of LSCP. Kallidonis et al.[14] showed that the operative time of LSCP was 99.75 min, which was lower than that observed in our study. However, in the study of Lee et al.[8], the mean operative time of LSCP was 124 min, which is consistent with our study. In the same review, the mean surgical time of RSCP was almost similar to that of our study (202 and 204.8 min, respectively). Docking time may prolong robotic surgery. However, the proceudre duration was approximately 10 min in our study.

Table 2. Peri- and postoperative outcomes and surgical characteristics

		Robotic-assisted sacrocolpopexy (n=16)	Laparoscopic sacrocolpopexy (n=52)	*p*-value
Intraoperative complications	Yes	0 (0%)	0 (0%)	
	No	16 (100%)	52 (100%)	
Pre-/postoperative hemoglobin difference	Mean ± SD	-1.71±0.71	-1.73±0.64	0.949***
Early postoperative complications	Yes	5 (31.3%)	3 (5.8%)	0.015**
	No	11 (68.8%)	49 (94.2%)	
Readmission	Yes	3 (18.8%)	8 (15.4%)	0.712**
	No	13 (81.3%)	44 (84.6%)	
Late postoperative complications	Yes	2 (12.5)	4 (7.7%)	0.620**
	No	14 (87.5%)	48 (92.3%)	
Secondary surgery for complications	Yes	0 (0%)	1 (1.9%)	1.000**
	No	16 (100%)	50 (96.2%)	
Length of hospital stay (days)	Mean ± SD	1.81±0.54	1.75±0.71	0.565****
Duration of urinary catheter (days)	Mean ± SD	1.13±0.34	1.06±0.24	0.371****
Drain usage	Yes	0 (0%)	1 (1.9%)	1.000**
	No	16 (100%)	51 (98.1%)	
Peritonisation	Yes	16 (100%)	52 (100%)	
	No	0 (0%)	0 (0.0)	
Mesh fixation method to the promontory (EndoFast Reliant™)	Sütür	10 (62.5%)	28 (53.8%)	0.542*
	Tacker	6 (37.5%)	24 (46.2%)	
Number of sutures used to suture the mest to the vagina	2	8 (50%)	28 (53.8%)	0.964*
	3	6 (37.5%)	18 (34.6%)	
	4	2 (12.5%)	6 (11.5%)	
Concomitant hysterectomy	Yes	12 (75%)	35 (67.3%)	0.759**
	No	4 (25%)	17 (32.7%)	
Concomitant colporraphy (anterior/posterior)	Yes	16 (100%)	49 (94.2%)	1.000**
	No	0 (0%)	3 (5.8%)	
Concomitant urinary incontinence surgery	Yes	16 (100%)	47 (90.4%)	0.330**
	No	0 (0%)	5 (9.6%)	

*chi-square test; **Fisher's Exact test; ***t-test in the independent groups; ****Mann-Whitney U test; SD: standard deviation

Contrary to some studies, the LSCP group had a higher postoperative pain than the RSCP group. However, the results did not significantly differ.[6,10,15]

In our study, there was no significant difference between the two groups in terms of late postoperative complications, which is consistent with a meta-analysis conducted in 2015.[6]

The mesh erosion rate in our study was consistent with the mesh erosion rate (1%) in the review study of Lee et al.[8], which included 11 studies with 1221 patients. Claerhout et al.[16] revealed that complications such as *de novo* constipation and dyspareunia were observed in the postoperative period. Meanwhile, ileus was not observed. In our study, contrary to this study, which did not show other symptoms, ileus was observed in 1.4% of patients.

Table 3. Timing of postoperative complications

Timing of postoperative complication	Group		*p*-value
	Robotic-assisted sacrocolpopexy	Laparoscopic sacrocolpopexy	
1 week to 1 year	1 (33.3%)	8 (80.0%)	0.120*
1–3 years	1 (33.3%)	2 (20.0%)	
>3 years	1 (33.3%)	0 (0.0%)	
Total	3 (100.0%)	10 (100.0%)	

*chi-square test

As suggested by Culligan et al.[3] re-peritonization was performed on the mesh to prevent bowel-related complications in our study. Securing the mesh with peritonization may explain the

low rates of bowel-related complications. However, some studies revealed that re-peritonization does not affect the bowel-related complication rate.[17]

In the review of Costantini et al.[18], it was stated that mesh erosion was more common in cases that underwent hysterectomy with SCP. In our study, mesh erosion was observed in only one patient who had undergone LSCP, hysterectomy, TOT, colporrhaphy anterior and posterior operations. However, we could not compare because this complication was not observed in another patient.

In our study, in accordance with the literature, there was no significant difference in terms of late postoperative complications between patients with sutures and those with tackers, which were used in the fixation of the mesh to the promontorium in the LSCP and RSCP groups.[19]

Borahay et al.[20] evaluated the outcomes of using barbed delayed absorbable sutures in RSCP in 20 patients. Ileus, mesh erosion, and apical defect recurrence were not observed. Meanwhile, grade 2 cystocele was observed in 5% of patients. The cystocele rate in this study was 4.4%, which is similar to the current one. Moreover, the rate of concomitant hysterectomy in the same study was 60%, which is similar to that of this study (75%).

Borahay et al.[20] showed that barbed delayed absorbable sutures are safe and effective for over 1 year in RSCP cases.

In our study, the readmission rates due to postoperative complications were compared according to the type of suture used in the vaginal vault. Meanwhile, the rate of readmission was 18.2% in patients with 2/0 polyglycolic barbed sutures. However, no readmission was observed among cases where 2/0 polyglycolic barbed suture was used.

Study Limitations

The current study had several limitations. The patients underwent different concomitant surgeries. In relation to this, the patient group was not homogenized. However, concomitant surgeries were commonly performed in the LSCP group. Therefore, it had no effect on the surgical time of the RSCP group. Further, the study was retrospective in nature, not randomized, and patients did not have preoperative POP-Q staging data on the degree of prolapse.

Although we did not compare the cost in our study, some studies in the literature showed that the cost of RSCP is higher than that of LSCP.[10,13,15]

CONCLUSION

LSCP was superior to RSCP in terms of operative time and early postoperative complication rate. Based on previous studies, RSCP had a higher cost than LSCP. Hence, the latter is the primary choice of treatment. However, with consideration of three-dimensional visualization, greater precision, and enhanced dexterity provided by robotic surgery, the choice of surgical method should be individualuzed according to the patient's preference and the the clinic's resources.

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ETHICS

Ethics Committee Approval: This study was approved by the Medical Ethics Committee of the Institutional Ethical Review Board of Acıbadem Mehmet Ali Aydınlar University Faculty of Medicine (ATADEK-2022-16/03).

Informed Consent: Retrospective study.

Peer-review: Internally and externally peer-reviewed.

Contributions

Concept: E.Ö., M.G.; Design: E.Ö., M.G.; Data Collection or Processing: E.Ö., M.G.; Analysis or Interpretation: E.Ö., M.G.; Literature Search: E.Ö., M.G.; Writing: E.Ö., M.G.

DISCLOSURES

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A posterior fornix ping-pong ball may be a more sensitive diagnostic test than the speculum test

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ABSTRACT

Relief of chronic pelvic pain and urgency by a speculum test is a standard part of the Integral Theory protocol for validating the pictorial algorithm's predictions for ligament causation. Supporting the posterior vaginal fornix with a ping-pong ball relieved a 51-year-old woman's deep pelvic pain and also improved her symptoms of frequent urination and night urination. A posterior fornix ping-pong ball would more directly support the uterosacral ligaments to relieve the tension on the visceral plexuses. As such it would appear to be a more direct test than the speculum test.

Keywords: Integral theory; diagnostic test; overactive bladder; pelvic floor; speculum test

INTRODUCTION

In 2013 Wu et al.[1] published a report of relief of chronic pelvic pain (CPP) and urgency by a speculum test which is part of the Integral Theory protocol for validating the pictorial algorithm's predictions for ligament causation. Wu et al.[1] stated "During vaginal examination, extreme tenderness was noted in the suburethral area of vagina immediately below the urethra. There was no hypersensitivity in the hymenal area on testing for vulvodynia. Gentle insertion of the posterior blade of a Cusco speculum into the posterior fornix relieved the feeling of urgency and the suburethral tenderness. The test was repeated twice, each time with the same findings".[1]

CASE REPORT

We describe a case report of 51-year-old woman whose main symptom was deep pelvic pain when urinating for one year, with frequent urination and night urination. The pain was irregular. It usually happened when she was "holding on" to her urine.

Main Symptoms

Deep CPP when urinating for one year, with frequent day and night urination. The pain was irregular. It usually happened when she was holding on to her urine. On testing with the validated integral theory system questionnaire (ITSQ), she had some urgency, frequency mean 15 times/day (range 10-18) and nocturia mean 3/night (range 2-5). She had tenderness at the

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entrance to the vagina consistent with vulvodynia. Her POP-Q score Table 1, showed cystocele but no uterine prolapse. Her flow test Table 2, showed slow flow. However, the patient had no symptoms of obstructive micturition. Urinalysis and cystoscopic examination were both clear. The patient was monitored by 5 consecutives 24-hour urinary diaries.

Despite the strong indications from the ITSQ questions indicating uterosacral origins of her CPP, the speculum test did not relieve the pelvic pain as per Wu et al.[1] We inserted a ping-pong ball and monitored the patient over a 24-hour period with diary. There was total relief of the micturition pain. We have since used the ping-pong ball as an objective test in women with CPP, but also, with overactive bladder (OAB) (urgency, frequency and nocturia).

Discussion

We have found the ping-pong ball was a more sensitive test for confirming uterosacral ligament (USL) origin for CPP and OAB than the speculum test.

The speculum test is well known as a test for the urge and CPP components of the posterior fornix syndrome (PFS). PFS consists of predictably co-occurring symptoms of urge, frequency, nocturia, CPP, abnormal emptying/urinary retention, caused by weak or lax USLs and cured or improved by USL repair.[2] The ITSQ is the only questionnaire which can directly diagnose PFS. Our patient, Mrs. Lu had all the PFS symptoms except for abnormal emptying. However, urodynamic testing showed a maximal flow rate of 15 mL/sec, which is considered borderline for obstructed micturition.

The speculum test was used by Goeschen et al.[3] as a screening test for CPP and also by Scheffler for his seminal paper on interstitial cystitis/Hunner's ulcer cure.[4] However, Scheffler, also used a probe in the posterior fornix as a predictive test for cure of urge and CPP.[4] Our ping-pong ball is not so different to the probe of Scheffler and roll gauze of Shkarupa et al.[5] who found relief of OAB symptoms (urge, frequency, nocturia) by applying a roll gauze in the posterior vaginal fornix. Shkarupa (personal communication to Dr. Petros), like us, found the gauze more diagnostic than the speculum test. With reference to Figure 1, a 4 cm round ping-pong ball would clearly provide more support for the USLs than a speculum test.

Table 1. The POP-Q score of patient

POP-Q					
Aa	0	Ba	0	C	0
gh	5	Pb	3	TvL	6
Ap	-3	Bp	-3	D	-3
POP-Q: pelvic organ prolapse-quantification					

Table 2. The urine flow test of patient

Maximum urinary flow rate, MFR↓	15 mL/s
Voided volume	211 mL
Residual volume	0 mL
Maximum uroflow rate time	4.35 s
Average urinary flow rate, AFR↓	7 mL/s
Urine flow time	27.60 s
Voiding time	28.65 s

CONCLUSION

Analysing Figure 1 from a mechanical perspective, it is evident that a pingpong ball would more directly support the USLs "USL" to relieve the tension on the visceral plexuses "VP".

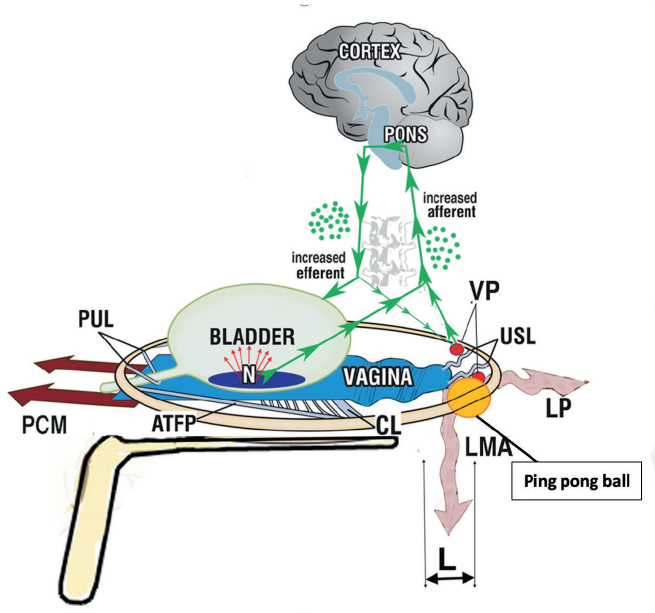

Figure 1. Speculum test: Supporting the posterior vaginal fornix and the urothelial stretch receptors "N" with a speculum blade. "L" indicates uterosacral ligament (USL) laxity
PUL: pubourethral ligament; CL: cardinal ligament; PCM: m. pubococcygeus; LP: m. levator plate; LMA: conjoint longitudinal muscle of the anus. Ping-pong ball supports USLs directly.

ETHICS

Informed Consent: Obtained for identified publication of her data.
Peer-review: Externally peer-reviewed.

Contributions

Surgical and Medical Practices: L.Y.R.; Concept: L.Y.R., L.L.B.; Design: L.Y.R., L.L.B.; Data Collection or Processing: L.Y.R., Analysis or Interpretation: L.Y.R., P.P.; Literature Search: L.Y.R., P.P.; Writing: L.Y.R., L.L.B., P.P.

DISCLOSURES

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Financial Disclosure: The authors declared that this study received no financial support.

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PELVIC FLOOR SYMPTOM QUESTIONNAIRE **DATE:** 2022-04-19

NAME : LU [redacted] DATE OF BIRTH : [redacted]

ADDRESS : Changshou District,Chongqing,China WEIGHT : 64kg

NO. OF VAGINAL DELIVERIES (1)

TELEPHONE : [redacted] NO. OF CAESAREAN SECTIONS (0)

DESCRIBE IN YOUR OWN WORDS YOUR MAIN SYMPTOMS AND DURATION:

Pelvic pain began to appear in June last year,from mild to severe.

ALL SECTIONS: MARK APPROPRIATE SQUARE ( ); if YES/NO circle or mark with colour. Write extra details if you wish

(A) ***S.I. SYMPTOMS***	**NO**	**YES** some-times	**YES** 50%or more
(A) DO YOU LOSE URINE DURING: SNEEZING, COUGHING OR EXERCISE	(*)	( )	( )
WALKING	(*)	( )	( )
(A) DURING INTERCOURSE	(*)	( )	( )
(A,TV) STOOPING, SQUATTING OR GETTING UP OFF A CHAIR	(*)	( )	( )
(M,P) ***SYMPTOMS OF DEFICIENT EMPTYING***			
DO YOU FEEL THAT YOUR BLADDER ISN'T EMPTYING PROPERLY?	(*)	( )	( )
DO YOU EVER HAVE DIFFICULTY STARTING OFF YOUR STREAM?	(*)	( )	( )
IS IT A SLOW STREAM?	(*)	( )	( )
DOES IT STOP AND START INVOLUNTARILY?	(*)	( )	( )
(A,M,P) ***URGE SYMPTOMS:***			
DO YOU EVER HAVE AN UNCONTROLLABLE DESIRE TO PASS URINE?	( )	(*)	( )

IF SO, DO YOU WET BEFORE ARRIVING AT TOILET YES/NO (circle)

If so, how many times a day do you wet? ? AVERAGE DAY ( ) GOOD DAY ( ) BAD DAY ( )

How much? a few drops ( ) teaspoon ( ) tablespoon or more ( )

(A,M,P) ***FREQUENCY SYMPTOMS:***

HOW MANY TIMES DO YOU PASS URINE DURING THE DAY? write number

AVERAGE DAY (15) GOOD DAY (10) BAD DAY (18)

(P) HOW MANY TIMES DURING THE NIGHT DO YOU GET UP TO PASS URINE write number

AVERAGE NIGHT (3) GOOD NIGHT (2) BAD NIGHT (4) write number

(P) ARE YOUR URGE /NOCTURIA SYMPTOMS WORSE BEFORE A PERIOD ? YES / NO (circle)

INFECTION DO YOU HAVE PAIN WHILE PASSING URINE? YES / NO (circle)

(TV) SUSPECT TETHERED VAGINA

PREVIOUS VAGINAL SURGERY OR BURCH OPERATION-. YES / NO (circle)

What operation? When?

In the morning do you wet uncontrollably immediately on getting out of bed? YES / NO (circle)

CONGENITAL

(A) DID YOU WET THE BED AS A CHILD BUT NOT AFTER PUBERTY? YES / NO (circle)

(P) DID YOUR PROBLEMS BEGIN SOON AFTER PUBERTY? YES / NO (circle)

BOWEL SYMPTOMS:

(P) DO YOU HAVE DIFFICULTY EVACUATING YOUR FAECES? YES / NO (circle)

(PB) DO YOU HAVE TO MANUALLY ASSIST DEFECATION YES / NO (circle)

(A,B) DO YOU EVER SOIL YOURSELF (FAECES)? YES / NO (circle)

wind ( ) liquid faeces ( ) solid faeces ( ) write number

each day ( ) each week ( ) each month ( ) write number

A.M.P. on the left indicate zone of vagina in the algorithm **A**nterior; **M**iddle; **P**osterior; TV=exclude tethered vagina syndrome

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The use of coffee for the prevention of ileus following abdominal surgery: A review of the current evidence

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ABSTRACT

Postoperative ileus (POI) is a form of intestinal paralysis that is seen especially after surgical procedures performed by entering the abdominal cavity. POI is common, particularly after abdominal surgery, with an incidence of 8-30%. The initial phase of postoperative paralytic ileus is treated with decompression using a nasogastric tube to correct electrolyte imbalances, with analgesia applied as needed. Prokinetic compounds have been used to prevent ileus and control pain (such as serotonin receptor antagonists, neostigmine, alvimopan, and ghrelin agonists), along with early mobilization, minimally invasive surgery, early introduction of solid food into the diet, thoracic epidural analgesia, and fluids. Coffee has been shown to accelerate postoperative bowel movements. However, despite extensive research on the physiological impacts of coffee, little is acknowledged regarding how it affects the gut. Coffee increases colonic motility within 4 min of consumption. In the postoperative period, the number of intestinal vocals heard by auscultation of intestinal vocals, first gas and first defecation times of patients who consume coffee are smaller/shorter than patients who do not consume coffee. Patients who drink coffee also have shorter hospital stays.

Keywords: Paralytic ileus; postoperative ileus; surgery; gynecological malignancy

INTRODUCTION

Postoperative ileus (POI) is a form of intestinal paralysis that is seen especially after surgical procedures performed by entering the abdominal cavity.[1] POI is a condition characterized by intestinal accumulation and consequent dilatation of the intestines as a result of the lack of a coordinated repulsive effect in the gastrointestinal tract. However, there is still no clarity about the pathogenesis of ileus occurring after surgery. POI is common, particularly after abdominal surgery, with an incidence of 8-30%.[1-4] POI usually resolves within 2-7 days of formation.[5,6] POI may be characterized by complaints of nausea, vomiting, bowel cramps and abdominal distention.[1] It takes 24-72 hours for normal motility of the gastrointestinal tract to be restored after manipulation. Irregular contractions, which may be unorganized and even vice versa, may occur during the dysfunctional period. As a reliable indicator of the function of

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the last part of the colon, such as the sigmoid colon and rectum, defecation does not guarantee that the coordination of the gastrointestinal tract has improved. Conditions that may occur after POI include fluid and electrolyte imbalance, impaired immunity, pneumonia, delayed wound healing and wound opening, and venous thromboembolism.[5,7] Considering the cost-effectiveness of the health system on the country, POI can create a serious burden.[3,4] In addition, the efficacy of chemotherapy will decrease as the duration of adjuvant therapy initiation is prolonged in patients undergoing surgery for malignant reasons. The complication rate, long-term hospitalization, and increased health service costs associated with POI constitute a serious burden.

The main reason why the pathogenesis of POI is not fully understood is the absence of a single cause and the additional burdens given by surgery, anesthesia and comorbidity. Putative causes include a systemic stress response to local trauma during surgery (due to adrenergic activity), opioid analgesics, inflammation, autonomic function, imbalances in the gastrointestinal hormonal system, and electrolyte imbalances.[1,8] Ileus is an inflammatory process that may occur as a result of manipulation-induced leukocyte accumulation and induction of nitric oxide synthase in the intestinal muscle layer.[9] Women who have undergone surgery for uterine, cervical, and ovarian cancers, especially those who have undergone a retroperitoneal lymph node dissection procedure, are at high risk of POI. It is thought that POI frequently occurs due to the risk of implantation in the intestinal serosa or mesentery, and the manipulation associated with the intense retraction required to move the intestines away from the site during pelvic and/or para-aortic lymph node dissection.

POI is treated via decompression using a nasogastric tube to correct the electrolyte imbalance, with analgesia applied as needed during the initial phase.[1] Prokinetic compounds have been used to prevent ileus and control pain (such as serotonin receptor antagonists, neostigmine, alvimopan), along with early stand up and moving, laparoscopy (minimal incision), early introduction of solid foods into the diet, reduced intraoperative nasogastric tube use, thoracic epidural analgesia, fluids and restriction of gum chewing.[1,8,10] Early enteral feeding not only stimulates repulsive gut activity, with this, it activates the secretion of hormones that cause the gastrointestinal tract to move forward.[2] While not an excellent sign of overall intestinal function, defecation is nevertheless the most reliable marker of bowel function. In recent studies in the literature, chewing sugar-free gum, which is an inexpensive and easily applicable method, has been investigated in order to shorten postoperative flatulence, defecation and hospital stay, and thus reduce the cost. The possible mechanism of chewing gum is increased salivation, increased pancreatic juice, and stimulation of the secretion of peptide hormones.[2] Unfortunately, no method is completely successful.[10] For example, opioid receptor antagonists significantly enhance bowel function, however, it should be noted that these drugs are expensive and difficult to find. As a result of long-term experience, it is known that early postoperative nutrition stimulates bowel motility, and this is thought to be under the influence of reflexes and gastrointestinal hormones. However, it is obvious that the incidence of nausea and vomiting may be higher as a result of early feeding. There are methods that improve the POI status by providing stimulation in the gastrointestinal tract and putting bowel motility into its normal activity. One of the most studied stimulants that can normalize bowel motility is coffee. It is also a very popular and constantly consumed beverage all over the world. In this article, we evaluated the connection between postoperative consumption of coffee and ileus.

Effect of Coffee on the Gastrointestinal System

Coffee is a widely used beverage all over the world, which has been shown to be effective on the cardiac and central neuronal systems, making it enjoyable to consume.[1,11] Coffee accelerates postoperative bowel movements.[12,13] Although its effect on the intestine and gastrointestinal system has not been clearly clarified, there are studies investigating its physiological effects. Coffee increases colonic motility within 4 minutes of consumption.[12,14] Several possible mechanisms are thought to explain the effects of coffee on ileus. One of them is the increase in gastrin secretion and the increase of colonic spike and motor activity thanks to this hormone.[15] Thanks to the exorphins in coffee, it has been determined that colonic motility is increased via opiate receptors in the brain and intestinal wall.[14,16] Another mechanism by which coffee stimulates the motor activity of the colon is due to antagonism of adenosine receptors.[9,17] Coffee has also been found to improve intestinal system by lowering esophageal sphincter pressure and stimulating gastric and small intestinal secretions.[18]

The main mechanism of coffee's effect on bowel function is thought to be due to the caffeine it contains. However, Dulskas et al.[19] in a study by caffeinated and decaffeinated coffee consuming patients were compared and reported that decaffeinated coffee consumption shortened their bowel movements at a similar rate. New chemically active compounds that emerge during the decaffeination process may have an effect on the intestine. However, there is a study that found that decaffeinated coffee causes 25% less motor activity in the colon than caffeinated

coffee.[14] Additionally, in a study in healthy people using manometry to measure rectosigmoid motor activity, consuming caffeinated and decaffeinated coffee had positive effects on the intestinal motility index.[12] More studies may be needed to understand the mechanism of action and chemical effects of caffeinated and decaffeinated coffee.

The Relationship Between Coffee Consumption and First Bowel Sound and Time of Defecation

It is possible to evaluate the actions of coffee drinking on the stomach intestinal tract by auscultating bowel sounds, and by determining the times to first postoperative flatulence and defecation. A randomized controlled trial by Müller et al.[13] concluded that gastrointestinal function is accelerated in patients who drink coffee without any change in postoperative morbidity. The first bowel movement occurred earlier in the coffee-consuming group, in addition, the duration of distention and solid food tolerance was similar between the groups.[13] Meta-analyses have revealed that tolerance to solid food, as well as times to first flatulence and defecation, are shorter in patients who consume coffee.[1,2,20] In a research by Güngördük et al.[10], patients that underwent abdominal hysterectomy and retroperitoneal lymph node dissection for a gynecological malignancy were evaluated. The coffee-drinking group consumed coffee three times per day, while the control group received ordinary postoperative nursing without coffee. The duration to first flatulence was reduced by 12 hours, the period to forbearance to solid nutrition decreased by 1.3 days, the length to primary intestine action decreased by 12 hours, and hospitalization duration decreased by one day in the coffee consuming cohort balanced to the control cohort. In addition, postoperative coffee drinking was found to be an independent preventive factor towards the development of POI, as assessed by regression analysis. In a study of patients with a gynecological malignancy, symptoms of POI were more common in the control than coffee-consuming group. In addition, the requirement for supplementary analgesic and/or antiemetic use in the postoperative period was found to be importantly less in coffee-drinking patients, which may have been due to less discomfort with the rapid passage of the first gas.[10] Postoperative coffee consumption resulted in a fewer period to primary flatulence, first intestine move, and initial defecation in patients after laparoscopic gynecological surgery compared to a control group. The coffee-consuming group also exhibited accelerated functional recovery of the gastrointestinal tract.[21] The state of tolerance to food was previously achieved by patients that consumed coffee after surgery. In addition, in the regression analysis of the studies, postoperative coffee drinking was an independent preventive factor inversely the occurrence of POI.[21] The mean time to first flatulence was 17 hours in a coffee-drinking cohort and 22 hours in a control cohort; the main finding of that study was a shorter time to comeback of intestinal functions to normal in patients who consume coffee.[9] Dulskas et al.[19] suggested that consuming coffee may result in a bowel movement up to 24 hours earlier during the postoperative period. In addition, consuming coffee during the early process after surgery and providing early move shortens the average time to initial gas, defecation, and intestine movement.[9] In 2015, in the study by Piric et al.[22], the effects of tea and coffee consumption after the operation were investigated in patients who had colon operations. In the study, the comeback of intestinal functions was followed and it was concluded that the primary defecation time was earlier in coffee drinkers.[22] Coffee not only shortens the time to first flatulence during the postoperative period, but also significantly shortens the time taken for solid foods to be tolerated.[2] In a study of healthy young volunteers who did not undergo surgery, 63% of the participants claimed that coffee led to the urge to defecate.[12]

Some studies have reported that similar results among coffee-drinking and control cohorts in terms of postoperative stool excretion time.[11] A meta-analysis showed that postoperative coffee consumption after cesarean section did not have a significant effect on stool excretion time,[20] particularly in cases in which bowel manipulation was not needed due to a short excretion time and large uterus. A general summary of studies on coffee consumption in postoperative patients is given in Table 1.

Effect of Coffee Consumption on Length of Hospital Stay and Medical Costs

Although the non-drug practices recommended in the enhanced recovery after surgery (ERAS) protocols result in significantly fewer periods to defecation, gas and tolerance of food after surgery, they do not shorten the hospital stay. However, adding coffee to the ERAS protocols may increase their clinical significance.[2] Patients who drink coffee had shorter hospital stays compared to a control group.[2,10,11,13,19] Similarly, the duration of the hospital stay was shorter for coffee- than tea-consuming patients.[22] Moreover, the length of stay was shorter in coffee-drinking cases that were operated on for a gynecological cancer.[10] However, it has been shown that there is a similarity in the during the hospital stay between those who drink caffeinated and decaffeinated coffee.[13] No correlation has been established between coffee consumption and any adverse effects during the postoperative period.[1,2,13,19,22] Due to the shorter hospital stays, it is expected that coffee drinkers will spend less on health services.

Table 1. Overview of studies on coffee consumption in postoperative patients

		Type of surgery	First flatus in the coffee group	First bowel movement in the coffee group	First defecation in the coffee group	LOS in the coffee group
Güngördük et al.[10]	3 per day, 100 g caffeine	Gynecologic oncology	↓	↓	↓	↓
Gungorduk et al.[21]	3 per day, 100 g caffeine	Laparoscopic gynecological surgery	↓	↓	↓	↓
Rabiepoor et al.[11]	3 per day, 100 g caffeine	Caesarean	↓	N/A	N/A	N/A
Koseoglu et al. [9]	3 per day, 100 g caffeine	Caesarean	↓	N/A	↓	N/A
Dulskas et al.[19]	3 per day, 8 g caffeine	Colectomy	↓	↓	NM	N/A
Piric et al.[22]	3 per day, 100 g caffeine	Colon and rectum surgery	NM	NM	↓	↓
Müller et al.[13]	3 per day, 100 g caffeine	Colectomy	N/A	↓	NM	N/A

NM: not mentioned; N/A: not applicable; LOS: length of stay

CONCLUSION

Coffee has been shown to accelerate postoperative bowel movements. The number of auscultated intestine vocals, and periods to initial flatulence and defecation after surgery, are smaller/shorter in coffee-drinking than non-coffee-drinking patients. Patients who drink coffee also have shorter hospital stays.

ETHICS

Peer-review: Externally peer-reviewed.

Contributions

Concept: K.G.; Design: K.G.; Data Collection or Processing: V.G.; Literature Search: V.G., İ.A.Ö.; Writing: K.G., İ.A.Ö.

DISCLOSURES

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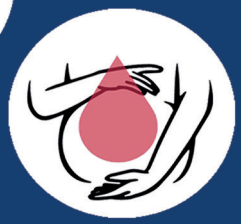

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ORAL PRESENTATIONS IN 9th INTERNATIONAL UROGYNECOLOGY CONGRESS

O1

Predictive value of anamnesis for detecting the dominant type of mixed urinary incontinence in postmenopausal patients

Ayşe Çitil Doğan

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Background: In this study, we aimed to investigate the reliability of the patient's anamnesis in diagnosing the dominant type in postmenopausal patients with mixed urinary incontinence complaints.

Materials and Methods: Fifty-seven postmenopausal women with mixed incontinence complaints were included in the study. The descriptive information of the patients and the type of incontinence were recorded. Used with SPSS 22.0 for statistical analysis of research data. In the diagnosis of incontinence, the power of agreement of amannesis and urodynamics was evaluated with the kappa coefficient.

Results: In the diagnosis of urinary incontinence, moderate agreement between anamnesis, urodynamics and physical examination; were found to be in postmenopausal (Kappa: 0.493) women.

Conclusion(s): We believe that in the diagnosis of the dominant type in postmenopausal women with mixed type urinary incontinence, anamnesis should be supported by physical examination and, if necessary, urodynamics.

Keywords: Patient history; physical examination; reliability, mixed incontinence; urodynamics; urge incontinence

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O2

A case report: Labiaplasty

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Background: Labiaplasty is a correction surgery performed on the genital area (1). The labium minus may be large, drooping, irregular or asymmetrical in some women. The drooping and large labium minus causes some aesthetic and functional problems (2). The drooping labium minus is irritated by contacting and rubbing underwear during walking, running or various sports activities. Prolonged irritation can cause skin rash, infection or ulcerative sores. This causes distress and problems in daily life. Labiaplasty can be planned due to both cosmetic concerns and the discomfort experienced by the patient. Hudoplasty can be added to these procedures depending on the situation (1,3).

Materials and Methods: A 34-year-old patient with hypertrophy of the labium minus applied to the outpatient clinic of our hospital. The patient had cosmetic concerns. She also had a feeling of discomfort, which he described when walking and wearing tight pants. Labiaplasty with the shaving technique was planned and applied to the patient. There were no intraoperative and postoperative complications.

Results: There was no problem in the postoperative follow-up of the patient. The patient's cosmetic and functional problems were resolved.

Conclusion(s): With the completion of the recovery period, labiaplasty surgery is a surgical operation with a very high satisfaction rate.

Keywords: Female genital aesthetic surgery; labiaplasty; labia minora reduction

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O3

Investigation of the efficiency of TOT and TVT and the parameters of residential urine volume in stress incontinence

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Background: Urinary incontinence is involuntary urinary incontinence that creates social and hygienic problems. Stress urinary incontinence (SUI) affects more than a quarter of all women aged 30-60 in the world. The most common types of urinary incontinence are stress incontinence 45%, urgency incontinence 25% and mixed types 28% (1). SUI is defined as the involuntary leakage of urine when the intra-abdominal pressure is increased, such as coughing, sneezing, laughing and heavy lifting. The gold standard treatment for SUI is surgery. Ulmstein et al. (2) in 1996, the midurethral sling was introduced to the literature as a tension-free vaginal tape (TVT), and then the transobturator tape (TOT) method was defined by Delorme (3). In both of these methods, a polypropylene mesh is used to support the suburethral tissue and in cases where intra-abdominal pressure increases, urethral closure resistance is increased. In this study, we aimed to examine the complication (intra-operative and post-operative) success rates and residual urine volume parameters of patients who underwent TVT and TOT surgery for stress urinary incontinence.

Materials and Methods: Patients who underwent TVT and TOT operations at University of Health Sciences Türkiye, Etlik Zübeyde Hanım Gynecology Training and Research Hospital between 2012 and 2020 were included. Demographic and clinical data of the patients [age, body mass index (BMI), parity, menopause status, duration of incontinence, length of stay, pre-operative-post-operative examination values, complications] were analyzed. Patients who had full access to their data within the date range were included in our study.

Results: One hundred ninety-nine patients were included in the study, and 98 (49.2%) patients were treated with TOT and 101 (50.8%) patients who underwent TVT surgery. Among the patients included in the study, there was no statistically significant difference in terms of age, parity, and BMI between those who had TOT and TVT operations ($p>0.05$). No statistically significant difference was observed in terms of presence of concomitant POP and menopausal status ($p>0.05$). There was a statistically significant difference in terms of duration of hospitalization and hospitalization, and it was higher in the TVT group ($p<0.05$). Although the complication of bladder injury was observed only in the TVT group, no statistically significant difference was observed between the groups in the general distribution of complications ($p>0.05$). A statistically significant difference was observed in terms of post-operative control residues of the patients ($p<0.05$).

Conclusion(s): Bladder perforation is an intraoperative complication that can occur in incontinence surgery. In studies, the incidence of bladder perforation was reported as 0.2-32.6% for TVT and 0-4.2% for TOT (4). The rate of bladder injury in the patients included in our study was less than the literature data. Although there were no patients in whom outlet obstruction developed and mesh tension was reduced, there were patients with globe vesical in both groups that regressed with catheterization. Although prospective, large-scale, randomized controlled studies are needed to examine the long-term effects of incontinence surgery procedures, the success of our TOT and TVT surgery seems to be high.

Keywords: Transobturator tape (TOT); transvaginal tape (TVT); stress urinary incontinence (SUI)

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O4

Deep infiltrative endometriosis, laparoscopic nerve decompression and nodule excision

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Background: Demonstrating laparoscopic excision of a deep infiltrative endometriosis (DIE) nodule located on the obturator nerve and Cul de sac.

Materials and Methods: A 32-year-old G1P1 patient presented to our clinic with long-standing severe dysmenorrhea, left hip and leg pain. In the gynecological examination, a painful DIE nodule in the Cul de sac was palpated. The operation lasted 125 minutes in the patient who underwent laparoscopic nerve decompression and nodule excision from Cul de sac. Intraoperative bleeding amount was 30 cc. No intraoperative complications were observed. In the EMG performed at the 6th month postoperatively, nerve regeneration was observed. Functional capacity improvement was good and the patient's complaints was resolved.

Discussion: DIE is defined as the penetration of endometriotic tissues 5 mm or deeper into the peritoneal surfaces. Nodules can penetrate many areas in the pelvis such as pelvic nerves (sciatic nerve, obturatory nerve), bowel, bladder and Cul de sac. Compression of the obturator nerve by the endometriotic nodule may cause entrapment neuropathy, pain and loss of sensation in the medial groin and hip (1). DIE nodule located in the cul de sac may cause severe dyspareunia together with dysmenorrhea. Surgical excision of all nodules is important, especially in symptomatic cases, in order to improve the patient's complaints and quality of life (2). Today, laparoscopic surgery is often preferred. Chronic inflammation can lead to disruption of anatomy, making it difficult to distinguish pelvic landmarks. Determining safe areas, performing a careful surgery by visualizing the ureters and pelvic vessels, and being careful in electrocauterization are important to reduce the possibility of complications (3). With the right technique, the intraoperative complication rate is 1%. It has been shown that performing minimally invasive surgery increases the quality of life, dysmenorrhea and dyspareunia in patients with pain and DIE if conservative treatment is not beneficial (4).

Conclusion(s): A good knowledge of pelvic floor and retroperitoneal anatomy and advanced surgical experience are important in DIE cases requiring surgery. In symptomatic DIE cases, if all endometriotic lesions are removed, improvement of the patient's symptoms, low recurrence rate and improved quality of life can be observed.

Keywords: Deep infiltrative endometriosis; obturator nerve decompression; laparoscopic surgery; endometriosis in Cul de sac

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O5

Repair of vesicovaginal fistula with transvaginal and abdominal approach: Pamukkale university urology clinic results

Mesut Berkan Duran, Kürşat Küçüker, Salih Bütün, Yusuf Özlülerden

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Background: Vesicovaginal fistula (VVF) is a pathological condition that causes a certain cost and negatively affects the quality of life and health, resulting in urine coming from the vagina as a result of the continuous leakage of urine from a tract between the bladder and the vagina. Transvaginal approach has recently been popularly used by surgeons because of similar success rates between the transvaginal and the abdominal approach. Factors such as fistula location and size, previous surgeries, history of VVF operation, necessity of simultaneous abdominal surgery, radiotherapy history, patient request, and surgeon's experience are considered in the selection of surgical technique (1). It is aimed to compare the characteristics and results of the patients with both approach.

Materials and Methods: In the study, 35 patients who underwent VVF operation between January 1, 2012 and November 1, 2022 were evaluated retrospectively. Fistula repair was performed with transvaginal approach in 23 patients and with abdominal approach in 12 patients. It was noteworthy that 9 of the patients who underwent fistula repair with abdominal approach had a history of previous VVF operation, 2 had simultaneous ureteroneocystostomy, and 1 patient had a history of radiotherapy. In the postoperative period, the patients were followed up for complications and recurrence.

Results: The mean age of the patients was 47.17±7.09. While the abdominal method was preferred in 12 (34.3%) of the patients, the transvaginal method was preferred in 23 (65.7%) patients. Recurrence was observed in 2 (8.6%) of 23 patients in whom the transvaginal approach was preferred, and in 2 (16%) of 12 patients in whom the abdominal approach was preferred (p=0.594). It was observed that in one of the patients who relapsed after the transvaginal surgical method, the fistula was localized on the opposite wall, and in the other, 3 millimetric fistulas were detected in the recurrence. A large fistula tract (4 cm) was observed in one of the patients who was preferred the abdominal approach and relapsed, while the other had adhesions and poorly healed tissues due to a previous VVF operation. Abdominal VVF repair was performed in the patients in both groups who relapsed, and no recurrence was observed in the follow-up.

Conclusion(s): Transvaginal and abdominal surgical techniques show similar success rates in vesicovaginal fistula surgery. In appropriate patient selection, the transvaginal approach stands out with its short hospital stay and recurrence rates similar to the abdominal approach (2). When the selection is made by considering the criterias, high success in both techniques can be obtained (3).

Keywords: Vesicovaginal fistula; surgery; urinary incontinence

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Table 1. Results of vesicovaginal fistula repair

	Transvaginal approach	Abdominal approach	Total
Number of patients	23 (65.7%)	12 (34.3%)	35
History of VVF repair surgery	-	9 (75%)	9
Simultaneous abdominopelvic surgery	-	2 (16.6%)	2
History of pelvic radiotherapy	-	1 (8.3%)	1
Relapse status	2 (8.6%)	2 (16.6%)	11.4%

O6

Our sacrocolpopexy and colpocleisis results: Pamukkale university urology clinic experiences

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Background: Pelvic organ prolapse (POP) is defined as a vaginal herniation of the pelvic organs. POP can be the origin of conditions that affect women's quality of life, such as urinary incontinence, fecal incontinence, discomfort of herniated organs, sexual dysfunction, chronic pelvic pain. Parity, vaginal delivery, age, menopause, history of gynecological operation and body mass index are identified as confirmed risk factors for the development of POP (1). In studies on anatomical prolapse, POP was detected in half of the patients and symptomatic cases were seen at a lower rate (2). Intervention and hysterectomy for urinary incontinence may be required concurrently with POP surgery. In this study, we aimed to present our experiences with sacrocolpopexy and colpocleisis in POP surgery.

Materials and Methods: In the study, 28 patients who underwent POP surgery between January 1, 2011 and November 1, 2022 were included. All patients had POP-Q stage 3 and above. Age, comorbidities, previous gynecological operations, history of prolapse and urinary incontinence surgery, and quality of life were recorded. In the postoperative period, the patients were followed up in terms of complications, incontinence and recurrence.

Results: Abdominal sacrocolpopexy was performed in 22 of the patients. Since 4 of the patients had a previous hysterectomy, the mesh was attached to vaginal cuff in those patients. The mesh was attached to the cervix in the remaining 18 patients. Since 17 patients who underwent sacrocolpopexy had concomitant urinary incontinence, the patients also underwent burch colposuspension and, if necessary, lateral defect repair. No recurrence or *de novo* incontinence was observed in 6 patients who underwent LeFort colpocleisis, and it was noted that all patients were satisfied. *De novo* urge incontinence was observed in 2 of 22 patients who underwent sacrocolpopexy, and it was noted that the incontinence regressed with medical treatment. Constipation was observed in one patient in the postoperative period and it was observed that it regressed with conservative medical therapy. Patient satisfaction was observed as 26/28 (92.8%) in general.

Conclusion(s): Abdominal sacrocolpopexy and colpocleisis can be applied in POP cases. They are methods with high success rates and satisfaction rates and low complication rates. Both methods have advantages to each other. Colpocleisis surgery stands out with shorter hospital stay. These patients should be well informed in terms of sexual life, and if there is concomitant stress urinary incontinence, it is recommended to perform the necessary surgery before colpocleisis (3). For sacrocolpopexy, the patient should be well informed about mesh and related complications beforehand. In the selection of surgical technique, the appropriate technique can be preferred by talking with the patient in appropriate indications, taking into account the experience of the surgeon and the patient's request.

Keywords: Pelvic organ prolapse; surgery; sacrocolpopexy; colpocleisis

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Table 1. Results of sacrocolpopexy and colpocleisis

	Abdominal sacrocolpopexy	LeFort colpocleisis	Total
Number of patients	22	6	28
Concomitant urinary incontinence and related continence surgery	17	0	17
Relapse status	0	0	0%
De novo incontinence	2	0	92.8%
Patient satisfactin	91%	100%	92.8%

O7

Urethral rotation angles in women with stress urinary incontinence

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Background: Transperineal ultrasonography (TPUS) in a non-invasive office procedure sensitive for assessing dynamic changes related with urethral mobility besides from examining pelvic floor structures (1). Several parameters regarding dynamic angle measurements have been proposed to be related with incontinence types (2). In this study we aimed to compare bladder neck rotation angles measured by TPUS between women with and without stress urinary incontinence (SUI).

Materials and Methods: Patient files of women assessed with TPUS were retrospectively analyzed. Women with SUI were extracted and bladder neck rotation angles were compared against women without SUI. Rotation angles were analyzed during resting and maximum valsalva according to a standardized method described previously (3). Inclination angle of the anterior uretra (Alpha angle) and posterior urethrovesical angle (Beta angle) were noted. Socio-demographic parameters of the SUI and the control group were also assessed.

Results: There were total 80 (40 SUI) women who met the inclusion criteria. Basal characteristics of the two groups are summarized in Table 1. Change in Alpha and Beta angle after valsalva was significantly higher in the SUI group (Table 2).

Conclusion(s): This study documented that change in Alpha and Beta angles after valsalva was significantly higher in women with SUI than that of in women without SUI. Al-Saadi (4) also showed that both the alpha. Beta angles at rest and straining and their change were significantly different between groups (4). However Antovska (5) reported no statistical significance of these angles between women with and without SUI. Heterogeneity in methodology and patient characteristics may cause these conflicting results. Nevertheless. TPUS have promising value in the assessment of women with SUI especially regarding the outcomes of surgical procedures in distinct group of women having different bladder neck measurements.

Keywords: Stress urinary incontinence; transperineal ultrasonography; alpha angle; beta angle

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Table 1. Characteristics of the study population

Parameter	Women without SUI	Women with SUI
Age	43±11	49.8±8.3
BMI	27.5±4.5	28.3±3.6
Gravida	2.3±1.2	3.2±1.4
Vaginal delivery #	1.7±1.3	2.5±1.1

BMI: body mass index; SUI: stress urinary incontinence

Table 2. Comparison of change in Alpha and Beta angle in study groups

	Women without SUI	Women with SUI	p-value
Change in Alpha angle	30.4±23.2	43.7±24.4	0.015
Change in Beta angle	29.6±22.4	42.7±23.4	0.013

SUI: stress urinary incontinence

O8

Laparoscopic hysterectomy with uterosacral plication for cervical intraepithelial neoplasia: Video presentation

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Background: Total hysterectomy is a known and acceptable treatment method for histologically proven cervical intraepithelial neoplasia III (CIN III) especially if there are co-existing conditions (1). Total laparoscopic hysterectomy (TLH) is fast becoming Türkiye's leading type of hysterectomy surgery. This depends on the availability of surgeons, surgical techniques, and the kind of theatre venue. There is also improvement in selecting a total laparoscopic hysterectomy as the gold standard procedure for reducing any residual or incomplete vaginal cuff (2).

Materials and Methods: This is a case series of recurrent CIN III that have been discussed at a multidisciplinary team meeting with a

resultant decision to offer a total laparoscopic hysterectomy with or without BSO. Pneumoperitoneum was created using a Veress needle. A 1.2-cm vertical incision was made at the level of the umbilicus, and a 10-12-mm trocar was inserted through the umbilicus (optic port), followed by a 10-mm 0° or 30° operative laparoscope. Three additional 5-mm trocars were inserted under direct vision at the levels of the lower abdominal quadrants (lateral to the rectus muscles), and another trocar was inserted in the suprapubic area via a midline vertical skin incision. The patient was then placed in the Trendelenburg position. Rumi II uterine manipulator instrument is inserted A concentric ring is noted for colpotomy. A posterior peritoneal reflection to the level of the uterosacral ensures a safe and wide colpotomy. The uterus is retrieved via the vaginal opening and an intracorporeal suture is used for laparoscopic closure of the vault with uterosacral plication.

Results: All cases (n=27) had uncomplicated TLH surgery via the modified palmers point view with no incomplete margins of cervical intraepithelial neoplasia. The average surgical time was 55 minutes, with minimal blood loss of fewer than 70 milliliters and an in-patient stay of 2.0 days. There were no bladder or bowel injuries. The margins were clear of cervical intraepithelial neoplasia on histology.

Conclusion(s): A uterosacral plication gives support to avoiding incomplete margins during TLH for CIN III treatment.

Keywords: Total laparoscopic hysterectomy; uterosacral ligament plication; recurrent cervical intraepithelial neoplasia

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O9

Anorectal angle is not related to quality of life in women with stress urinary incontinence

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Background: Transperineal ultrasonography (TPUS) has been used to investigate various static and dynamic measurements in pelvic floor (1). TPUS can also be used o measure anorectal angle (ARA) with a much better tolerability than defecation proctography (2). In this study we aimed to assess the influence of ANA on quality of life in women with stress urinary incontinence (SUI).

Materials and Methods: TPUS results of women with SUI were analyzed. Patients were divided into two groups according to ARA measurements during rest (group A: ARA <120, group B: ARA ≥120). incontinence impact questionnaire (IIQ-7) was used for evaluation of incontinence related quality of life (3).

Results: There were total 33 women with SUI who had available ARA measurements. Of them 19 had ARA measurements <120° Basal characteristics of the study groups are summarized in Table 1. When IIQ-7 total scores were compared between two groups, no significant difference was found (Figure 1).

Conclusion(s): This study documented that changes in ARA measurements do not have any impact on incontinence related quality of life among women with SUI. Grasso et al. (4) showed good concordance between ultrasound and fluoroscopicdetermination of the anorectal angle. TPUS was first introduced as a reliable diagnostic tool in 1992 in this field (5) and has been used since than popularly in the investigation of anorectal dysfunction. Although TPUS is a non-invasive and well tolerated diagnostic modality for the assessment of anorectal dysfuntion, results of ARA measurements seem not to be related with the incontinence related quality of life for the women with SUI.

Keywords: Anorectal angle; stress urinary incontinence; transperineal ultrasonography

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Table 1. Characteristics of the study population

Parameter	ARA <120°	ARA ≥120°	p-value
Age (years)	42.7±10	49.4±12.6	0.903
BMI (kg/m²)	27.7±4.9	26.9±3.7	0.387
Gravida	2.3±1.1	2.4±1	0.254
C-section #	0.7±1	0.2±0.6	0.549

ARA: anorectal angle; BMI: body mass index

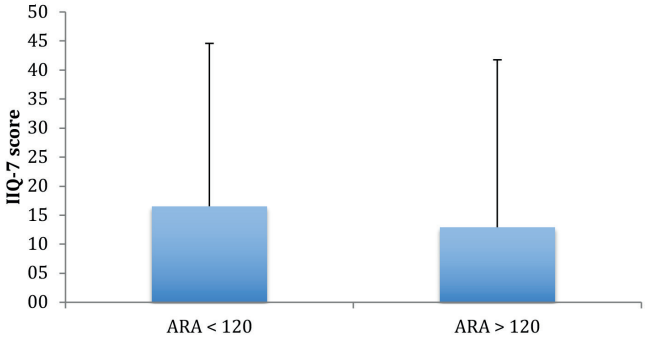

Figure 1. Comparison of total IIQ-7 scores between two groups
ARA: anorectal angle; IIQ: incontinence impact questionnaire

O10

Construction of neovagen with the Wharton-Sheares-George method: Case series and long-term results

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Background: Mayer-Rokitansky-Küster-Hauser syndrome (MRKHS) is estimated to affect 1/4000-5000 of women (1). In the past, the main purpose of the treatment of these patients was creating a functional neovagen with low morbidity in the short and long term, while the increasing possibilities of uterine transplantation surgery in the world have brought into question the suitability of neovagina formation methods for transplantation. In recent studies, the suitability of neovagen formation methods for transplantation has been reviewed and it has been seen that the Wharton-Sheares-George method is applicable (2).

Case 1: Our first case is a 35-year-old female patient with a previous diagnosis of MRKHS, whose priority was to have a functional vagina. In 2020, the neovagina was created with the Wharton-Sheares-George vaginoplasty procedure. It was observed that epithelialization was achieved at the post-operative 30th day control (Figure 1). It was learned that the patient applied to another clinic for formation of the uterus from the rudimentary horns and connection with the vagina. During this period, spontaneous pregnancy did not occur. In the control, it was observed that stenosis developed between the uterus and the vagina, but the functional vagina, approximately 7 cm long and 3 cm wide, persisted.

Case 2: A 26-year-old female patient with normogonadotropic amenorrhea presented with the complaint of primary amenorrhea, developed secondary sex characteristics and with no known comorbidity and no drug use. The patient with 46, XX chromosomes was diagnosed with complete MRKHS without renal anomaly, and a neovagen was formed with the Wharton-Sheares-George vaginoplasty procedure, a depth of approximately 8 cm and a width of 3 cm (Figure 2).

In both patients, neovagina was created by the Wharton-Sheares-George vaginoplasty procedure; Obliterated Mullerian canals were dilated with the help of Haegar bougies with simultaneous laparoscopy and the vesicorectal space was surgically dissected up to the pelvic peritoneal border. Estrogen cream-applied vaginal mold was inserted into the vagina created without using any transplant, and it was followed for 10 days. Afterwards, necessary trainings were given and both patients were discharged in good health.

Results: It was observed that both patients had a functional vagina after the operation and more cosmetic results were obtained compared to the methods using grafts. In a study evaluating the long-term follow-up results of cases in which this method was applied, it was reported that sufficient vaginal depth to persist (96%), physiological epithelialization (80%) and no contracture formation (91%) were reported (3). The disadvantages of the method are that it requires lifelong dilatation to prevent the development of secondary stenosis and rectocele/cystocele (4). In another study in the literature, it was reported that no evidence of deterioration in sexual and psychosocial functionality was found (5). The Wharton-Sheares-George technique seems particularly suitable for potential uterine transplantation as it creates a natural neovaginal axis. There is a need for survey studies on long-term sexual life.

Keywords: Neovagina; Mayer-Rokitansky-Küster-Hauser syndrome; Wharton-Sheares-George technique

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Figure 1. Case 1, at the post-operative 30th day

Figure 2. Case 2, intra-operative appearance of neovagina

011

The effect of vaginal closure technique on the colpocleisis success rate

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Background: To evaluate the effect of horizontal and vertical vaginal cuff closure of colpocleisis procedure on the post operative success rate of the surgery.

Materials and Methods: Women with uterine prolapse or vaginal vault prolapse of stage 2 or higher were included to this study. All patients underwent total colpocleisis with levatoroplasty. Patients were evaluated into two groups in terms of the vaginal cuff closure technique employed which is either vertically (group 1, right to left) or horizontally (group 2, anterior to posterior). Patients who underwent anti-incontinence surgery were excluded from the study. The prolapse stages, incontinence rates and pelvic evaluations of the patients at sixth months and first year were compared.

Results: A total of 49 women participated, 23 in group 1 and 26 in group 2. No recurrence of prolapse was found. It was observed that the urethra-perineal body distance and perineal body measurements of group 2 patients were significantly higher. In addition, it was observed that the transverse vaginal opening was significantly reduced in this group. Postoperative incontinence was significantly less common in group 2 patients.

Conclusion(s): Colpocleisis is a procedure with high success rates that can be preferred in sexually inactive patients. Postoperative incontinence is an important complication of this procedure and limits the use of this technique (1,2). Horizontal closure of the vaginal cuff prevents retraction of the urethra towards the perineal body, thus reducing the incidence of this complication (3,4). Horizontal approach should be preferred for closure of the vaginal cuff after colpocleisis.

Keywords: Colpocleisis; pelvic organ prolapse; closure

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O12

Management of recurrent labial dehiscence after labioplasty; a case report

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Background: Labiaplasty is the world's fastest growing cosmetic surgery in the last 10 years increased as at least 10 times according to NHI (1). However, the complication rates are also increasing in compliance with the growing numbers. Dehiscence especially in wedge resection is one of the foremost and hardest complications of labia minora plasty. There is a longer learning curve for the wedge resection technique to acquire the judgment to estimate the angle of the resected tissues. Excessive tension may result in partial or complete wound dehiscence. Post-opertive hematomes or abcesses may result with disturbed wound healing and dehiscence. Early on, it is best to underresect to minimize this difficult problem.

Case: In this case, a 42 year old women admitted to our clinic after two times of recurred dehiscence following 2 repeated abscess clinic (Figure 1). There was a 3 cm distance within the scar tissue between the superior and inferior labiums. We performed v-y plasty for the lateral walls to compose considerable subcutaneous supportive tissue by reducing tissue tension. Afterwards, we composed flattering flaps from the inferior residual labiums and posterior fourchette. As a result the patient was recovered without any complication or colour discrepancy (Figure 2).

Conclusion(s): There are different surgical techniques of reconstruction after dehiscence. Flap augmentation is the frequently used method. But there are several problems with this technique: one may see color discrepancies with the superior flap not matching the color of the inferior flap, and this is not always correctable. Modifications might be required to treat clitoral hood redundancy. Redundant tissues of the vaginal fourchette may be addressed with a conservative "U-shaped" local resection (2).

Keywords: Labiaplasty; dehiscence; complication; management

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Figure 1. Pre-operative assessment of patient with recurred dehiscence history

Figure 2. Early post-operative and at the first day view of the patient

O13

The effect of mediolateral episiotomy performed on primiparous before delivery of the placenta on postpartum hemorrhage

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Background: In the third stage, the process between the birth of the baby and the expulsion of the placenta and membranes, uterine muscle tone increases, the placenta is gradually separated, the maternal vessels contract, the coagulation system is activated, and the amount of bleeding decreases (1,2). In addition to these physiological mechanisms, active management with medical treatments and interventions recommended by the International Federation of Gynecology and Obstetrics and the World Health Organization have become important means for reducing postpartum hemorrhage and maternal mortality (3,4). Active management not only reduces maternal mortality capable of being caused by postpartum hemorrhage, but also reduces

complications that result in severe morbidity, such as hypovolemic shock, disseminated intravascular coagulation, acute renal failure, and Sheehan's syndrome (5,6). Episiotomy, which is particularly applied in case of first births, involves an incision to the external genital organs during birth and is preferred because its produces a wound with smooth edges that heals easier and entails a lower risk of sphincter and rectal injury (7). This study aimed to investigate whether mediolateral episiotomy performed on primiparous women before delivery of the placenta has any effect on postpartum hemorrhage.

Materials and Methods: One hundred two women with gestational ages of 37-41 weeks and undergoing vaginal delivery with mediolateral episiotomy were prospectively included in this study between December 2021 and June 2022 (group 1: Episiotomy repair without separation of the placenta, n=51 and group 2: Episiotomy repair after placental separation n=51). Following delivery of the fetus, the sterile hemorrhage-collecting v-drape was placed under the patient. The participants' socio-demographic characteristics and laboratory results were documented and compared between the groups.

Results: No difference was determined between the groups in terms of maternal age, BMI, education level, economic status, miscarriage rates, regular antenatal care, gestational age at delivery, Bishop scores on admission, rates of labor induction, birth time and weight, Apgar scores, retained placenta rates, NICU admission, or length of hospital stay (p>0.05). Although hemoglobin (Hb) and hematocrit (Htc) levels on admission, leukocyte counts on admission and after delivery, and platelet counts on admission and after delivery were comparable (p>0.05), Hb (11.65±1.54 g/dL vs 10.90±1.41 g/dL, p=0.010) and Htc (35.31±4.27 vs 32.91±3.93, p=0.004) levels after delivery and amounts of blood loss (115.10±60.45 mL vs 156.37±107.52 mL, p=0.019) differed significantly between the groups.

Conclusion(s): Episiotomy repair performed without separation of placenta results in a smaller decrease in hemoglobin and hematocrit values and reduces postpartum bleeding. Further studies with larger cohorts are now needed to support the results of the present research.

Keywords: Episiotomy; postpartum bleeding; vaginal delivery

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O14

The effect of time from uterine incision to delivery on neonatal outcomes in previous and repeat cesarean sections

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Background: Recent studies have emphasized that uteroplacental blood flow decreases following uterine incision during cesarean section, and this may result in neonatal hypoxia (1). Prolonged uterine manipulation and compression of the fetal head may also lead to neonatal hypoxia (2). Based on this pathophysiology, researchers have speculated that a prolonged uterine incision-delivery time may exacerbate neonatal hypoxia (3). The incidence of neonatal hypoxia, which occupies an important place in neonatal morbidity, is 0.03%. The fact that this figure has remained unchanged despite advances in the neonatal intensive care unit (NICU) is due to the more frequent occurrence of unavoidable intrapartum events in the etiology (4). The causes of perinatal hypoxic-ischemic damage are antenatal (maternal arrest, maternal hemorrhage, congenital anomalies) in 20% of cases, intrapartum (placental abruption, uterine rupture, intrapartum trauma) events in 35%, combined antenatal and intrapartum events in 35%, and postnatal events in 10% (5). Increasing cardiac output with the activation of the sympathetic nervous system reduces the blood flow in the musculoskeletal system, gastrointestinal system, and kidneys, and the body endeavors to protect the blood supply of the heart and brain, which are more vital organs (6,7). The aim of this study was to compare the effect of time from uterine incision to delivery on neonatal outcomes in women with previous and repeat cesarean sections.

Materials and Methods: One hundred forty-six pregnancies with gestational ages of ≥37 weeks involving cesarean delivery between January 1and June 30, 2021, in our hospital's obstetrics clinic (group 1, previous cesarean section, n=103 and group 2, repeat cesarean section, n=43) were prospectively included in the study. The participants' socio-demographic and obstetrics characteristics and laboratory results were documented and compared between the groups.

Results: Although body mass index, education level, economic status, gravidity, parity, miscarriages, birth type, gestational age at delivery, gender, birth weight, Apgar scores, admission to the neonatal intensive care unit, hospitalization length, preoperative and postoperative hemoglobin-hematocrit levels, leukocyte and platelet counts, blood loss, umbilical cord pH, lactate, base deficiency, and the rate of obstetric complications were comparable between the groups ($p>0.05$), age (27.65 ± 5.26 vs 31.77 ± 5.28 in groups 1 and 2, respectively, $p<0.001$) and time from uterine incision to delivery (40.15 ± 10.40 vs 53.23 ± 12.33, respectively, $p<0.001$) differed significantly between the groups.

Conclusion(s): The findings from this study show that time from uterine incision to delivery has no effect on neonatal outcomes in patients with previous and repeat cesarean sections. Further studies with larger cohorts are now needed to elucidate this issue.

Keywords: Neonatal outcomes; previous cesarean section; repeat cesarean section; uterine incision to delivery

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O15

Association of cervicovaginal *Lactobacillus* reduction with persistence of HPV in women with high-risk HPV infection

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Background: It has been demonstrated that cervicovaginal inflammation may contribute to carcinogenesis by potentiating the effect of HPV infection (1). In this study, we aimed to determine the relationship between *Lactobacillus* reduction and cervical HR-HPV persistence.

Materials and Methods: We studied a total of 100 women aged 30-65 years, who were followed up after colposcopic evaluation for high-risk HPV infection. In the first year follow-up, we determined two groups; HPV positive (HPV persistent, n=43) and HPV negative (HPV clearance, n=57) patients. We collected blood samples with cervicovaginal swab specimens and evaluated outcomes in terms of Nugent score, *Lactobacillus* dominance, white blood cell count (WBCc), age, and menopausal status.

Results: Among 100 patients included in our study, 43 (43%) patients had HPV persistence, and HPV persistence was more common in the group with *Lactobacillus* depletion. Although *Lactobacillus* reduction was detected in 21.1% of women in the HPV regression group, this rate was significantly higher in the HPV persistent group (46.5%, p=0.007) (Table 2). Moreover, we found that the mean age and incidence of menopause in the group in which HPV persisted was significantly higher than the other group (45.0 ± 10.7 vs 40.7 ± 7.7, p=0.03 for mean age and 39.5% vs 15.8%, p=0.007 for menopause incidence) (Table 1). We did not observe a significant difference in the median value of Nugent scores (1 vs 2, p=0.745) and WBCc median values [7.4 ± 1.8 and 7.6 ± 1.9 (p=0.610)] of cervicovaginal samples (Figures 1, 2). We analyzed mean age, menopausal status and lactobacillus reduction with logistic regression analysis, which are the parameters found to be significant in terms of HPV persistence, with this analysis, we found that *Lactobacillus* reduction was significantly associated with HPV persistence, regardless of age and menopausal status (Table 3).

Conclusion(s): We found that *Lactobacillus* reduction in the cervicovaginal microbiota was associated with persistence of HPV, regardless of age and menopausal status.

Keywords: HPV; persistence; *Lactobacillus*; nugent score

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Table 1. Mean age and menopausal status of the patients included in the study for groups with and without HPV persistence			
Demographic and clinical characteristics	**Without HPV persistence**	**With HPV persistence**	**p-value**
Age (average ± SD)	40.7±7.7	45.0±10.7	0.03*
Menopausal status [n (%)]	9 (15.8%)	17 (39.5%)	0.007*
*p<0.05; HPV: human papillomavirus; SD: standard deviation			

Table 2. The relationship between *Lactobacillus* reduction and persistence of HPV			
	Without HPV persistence n=57 (100%)	**With HPV persistence n=43 (100%)**	**p-value**
Normal *Lactobacillus* count (n=68)	45 (78.9%)	23 (53.5%)	0.007
Decreased *Lactobacillus* (n=32)	12 (21.1%)	20 (46.5%)	
p<0.05; HPV; human papillomavirus			

Table 3. Logistic regression analysis results for HPV persistence					
Parameters	**B**	**Standard deviation**	**Odds ratio**	**95% confidence interval for odds ratio**	**p-value**
Constant	-1.412	1.525	0.244		0.354
Age	0.014	0.039	1.014	0.940-1.095	0.716
Menopausal status	0.774	0.833	2.169	0.424-11.105	0.353
Lactobacillus reduction	0.982	0.467	2.668	1.069-6.662	0.036*

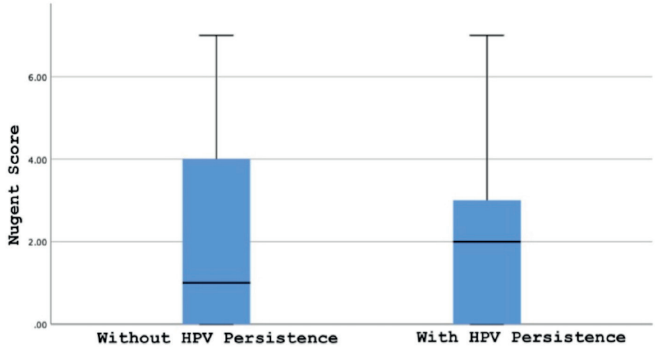

Figure 1. Comparison of median Nugent score between groups with and without HPV persistence

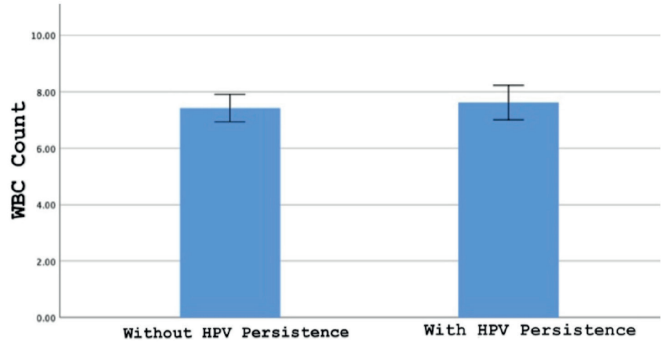

Figure 2. Comparison of median white blood cell count between groups with and without HPV persistence

O16

Investigation of the effect of the Manchester-Fothergill procedure on the risk of development of cervical malignitis

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Background: Pelvic organ prolapse (POP) is the condition of the female pelvic organs, including bladder, uterus, vaginal cuff after hysterectomy, and bowel loops, descending and protruding from the vaginal orifice (1). The lifetime risk of women undergoing pelvic reconstructive surgery due to POP is 11%. POP can be treated with conservative or surgical approaches. Several surgical techniques aim to preserve the uterus. These include sacrocolpopexy, in which the uterus is preserved, sacrospinous ligament fixation, and the Manchester-Fothergill (MF) procedure (2). However, despite the obvious advantages of uterine-sparing procedures, long-term follow-up is also required. This study was conducted to investigate the risk of developing cervical malignancy after POP surgery with the MF procedure.

Materials and Methods: Patients who underwent MF operation between 2013 and 2022 at University of Health Sciences Türkiye, Etlik Zübeyde Hanım Gynecology Training and Research Hospital were included. Demographic and clinical data of the patients (age, gravida, parity, smoking, comorbid disease, menopause status, preoperative-postoperative examination values, complications, preoperative- postoperative cervical scan/Pap smear results) were analyzed. Patients who had full access to their data within the date range were included in our study. The screening results of the patients who were screened according to the National Standards of the General Directorate of Public Health Cancer Department Cervical Cancer Screening Program were obtained from the Hospital Information system or the E-Nabız information system.

Results: The mean age of 57 patients included in the study was 40.19±8.22. Gravida was in the range of (1-12) Parity (1-10). Eight of the patients (14.1%) had a history of smoking. Eight of the patients (14.1%) had a history of comorbid disease. Three of the patients (5.2%) were in the menopausal period during the operation period. The mean preoperative hemoglobin value of the patients was 12.82±1.21, and the mean postoperative hemoglobin value was 11.05±1.51. Postoperative complications (Globe vesicale, Hemotemetra and wound site infection) were observed in 3 (5.2%) patients, and treatment and follow-up were planned. No patient with cervical cancer or precursor lesion was reported in the preoperative – postoperative cervical screening/Pap-smear results of the patients who were operated between 2013 and 2022 and whose data were scanned until 2022.

Conclusion(s): Cervical pathology was not observed in the patients included in our study, and in a study including 299 patients who underwent MF operation in Denmark, regressed CIN I result was observed in 1 patient during the follow-up period (3). Although prospective, large-scale, randomized controlled studies are needed to examine the long-term effects of uterine-sparing procedures, the risk of developing cervical malignancy after the MF procedure appears to be low.

Keywords: Manchester-Fothergill; cervical malignancy; Pap-smear test

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O17

The frequency of absence of vaginal bleeding during first sexual intercourse and its psychological effects on women

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Background: The hymen is a metaphorand symbol of female virginity that exposes gender inequalities between young women and men through a wide variety of cultural implications and traditions (1). Virginity is generally thought to be related to the integrity of the hymen, which is commonly believed to rupture and bleed during first coitus (2). Vaginal bleeding during the first sexual intercourse as claimed an indicator of virginity is a taboo particularly in Muslim countries (3). Many women who do not bleed at first intercourse are exposed to various forms of psychological and physical violence. This therefore represents a major stress factor among women. The fear of not being seen to be a virgin on the wedding night can cause very significant problems including depression, isolation, feelings of guilt, suicide, and even fear of being murdered (2). This “honor-related” violence takes place in many countries worldwide. Some 5000 women are murdered worldwide every year in so-called “honor killings” (4). This study aimed to determine the percentage of women with no vaginal bleeding during first sexual intercourse and to analyze the potential psychological, physical, sociological, and sexual effects of first sexual intercourse.

Materials and Methods: Five hundred thirty-three sexually active white Turkish women were included in the study. The primary outcome was to identify the frequency of vaginal bleeding during

first intercourse. Secondary outcomes were to compare sexual functions and the psychological, sociological, and physical effects of first sexual intercourse between women with and without vaginal bleeding.

Results: One hundred fifty-five (group 1 =29.08%) women experienced bleeding after first intercourse, while 378 (group 2 =70.92%) experienced no bleeding. Age, body mass index, age at first intercourse, partner's age, place of residence, maternal and paternal educational levels, spasm and orgasm in intercourse, and receipt of psychiatric support for psychosexual disorder were comparable between the groups ($p>0.05$), while participants' educational levels, economic status, marital status, number of marriages, fear, arousal, pain at first intercourse, and number of attempts to achieve successful first intercourse differed significantly ($p<0.05$). In addition, 41.9% of the participants in group 1 had experienced psychological or physical violence from their partners, family members of the partner, or their own family members.

Conclusion(s): The absence of vaginal bleeding after first sexual intercourse can cause psychological, sociological, physical, and sexual problems for women. Bleeding may not be a reliable sign of virginity. Promulgating this fact may enhance public awareness and make a very important contribution to reducing psychological and physical violence against women.

Keywords: Hymen; psychological effects; sexual intercourse; vaginal bleeding; virginity

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O18

Effectiveness of transobturatuar tape in patients with stress type incontinence and evaluation of complications

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Background: Stress urinary incontinence (SUI), which is one of the types of urinary incontinence, is defined as "involuntary urinary incontinence seen in situations where intra-abdominal pressure increases such as coughing, sneezing and straining," according to the 2002 report of the International Continence Association (1). Urethral hypermobility and sphincteric insufficiency due to the weakness of the pelvic floor muscles are blamed in the pathophysiology of stress urinary incontinence, which is defined as urinary incontinence as a result of the intra-bladder pressure exceeding the urethral closure pressure, without detrusor contraction (2). Its prevalence is 20-30% in young women over the age of 20,30-40% in middle age, and 30-50% in older ages (3). The main goal in the surgical treatment of SUI is to maintain continence with minimal morbidity. New and minimally invasive surgical methods are constantly being described in the treatment of SUI (4). In this study, it was aimed to evaluate complications and success rates in patients who applied to our clinic for stress incontinence and underwent transobturatory tape (TOT) procedure.

Materials and Methods: Twenty-eight patients who applied to the Aksaray Training and Research Hospital, Obstetrics and Gynecology Clinic due to stress incontinence between August 2020 and August 2022 and underwent TOT procedure were retrospectively scanned. Early and late complications were recorded by examining the file data of the patients' controls. The operation was considered successful in patients who did not have urinary incontinence due to increased intra-abdominal pressure in at least three-month follow-up after the operation.

Results: Between August 2020 and August 2022, a total of 28 patients underwent TOT procedure in our clinic, and 15 patients had only stress type incontinence, while 13 patients had mixed type incontinence (stress type incontinence and urge incontinence). While the mean age of the patients was 57.14±11.2 (41-80), the mean number of deliveries was 3.16±1.2 (1-10). Twenty-two patients (78.5%) were in the postmenopausal period. There were 15 patients (53.5%) with urogenital prolapse on examination, and additional surgery was performed for the prolapse. There were 25 patients (89.2%) whose complaints of stress incontinence disappeared from the patients who came to the control after 1 month. While major complications such as bladder perforation, hemorrhage and bowel injury were not observed in our clinic, urinary retention resolved with temporary catheterization in 5 patients (17.8%), while temporary micturition difficulties were observed in 8 patients (28.5%) that did not require intervention.

Keywords: Transobturator tape; stress incontinance; urinary incontinance

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O19

Relationship with melanocortin, oxytocin, androgen receptor level in vaginal tissue and sexual functions

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Background: Research on female sexual function underlines the lack of knowledge about the functional anatomy and function of the vagina, and these considerations emphasize the role of the human vagina not as a passive conduit but rather as a clinically contractile organ of women's physical receptivity and sexual response. Peripheral neurochemical pathways involved in the control of female sexual responses are largely unknown and uncharacterized. Clinical studies have uncovered a number of potential neurotransmitter candidates that may include the control of female sexual response. Melanocortin and oxytocinergic neuronal systems and androgenic pathways are thought to play crucial roles in regulating female sexual desire and arousal. In line with this information, we aimed to investigate the levels of melanocortin 4 receptors (MCR4), oxytocin receptors (OR) and androgen receptors (AR) in the distal anterior vaginal tissue and its relation with sexual functions.

Materials and Methods: In the study group, patients who were operated with the diagnosis of cystocele and vaginoplasty request; anterior vaginal tissues that were removed by colporrhaphy anterior operation and were not routinely sent for pathological examination were included, and the analysis of MCR4, OR, AR in the patients' vaginal tissue was investigated by immunohistochemical method. For the evaluation of sexual functions, the female sexual function index (FSFI) scale was filled in by the patients before the operation and the results were recorded. Mann-Whitney U and Student's t-test were used for statistical analysis. Statistical significance was evaluated at the $p<0.05$ level.

Results: In the immunohistochemical evaluation of the anterior distal vagina, MCR4, cytoplasmic staining; detected in squamous epithelium. OR, cytoplasmic and membranous staining; In muscle tissue, stromal cells, vascular endothelial cells, AR was nuclear stained and detected in stromal and vascular endothelial cells. There was no significant difference in terms of melanocortin receptor and androgen receptor staining intensity and FSFI sub-dimensions and total score. When the FSFI scores were compared, the desire, arousal, orgasm and FSFI total scores of those with oxytocin receptor + 2 staining were found to be significantly higher than those with + 1 staining.

Conclusion(s): Our study confirms the presence of MC4R, OR and AR in the human vagina immunohistochemically and suggests that the intensity of OR immunoreactivity is positively related to sexual functions. Of course, further studies are needed to understand the physiological role of vaginal peripheral receptors on sexual functions.

Keywords: Androgen; immunohistochemistry; FSFI; melanocortin; oxytocin; vagina; sexual function

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O20

Bacterial colonization results of IUDs and urine samples in women with chronic pelvic pain

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Background: Chronic pelvic pain (CPP) CPP is defined as pain, tenderness or extreme discomfort lasting more than six months. The diversity of etiological factors complicates the treatment. The most common identifiable causes of CPP are endometriosis, pelvic adhesions, chronic pelvic infection, myoma uteri and ovarian cyst. The intrauterine device (IUD) is seen as a mediator for the ascending genital flora and the spread of pathogens into the abdomen. Although it is not as severe as pelvic inflammatory disease, it was aimed to evaluate whether the IUD has an effect on the development of CPP by taking culture samples from patients with chronic pelvic pain with findings that may suggest vaginitis or cystitis. In this study, it was aimed to investigate possible factors by evaluating the IUD and urine cultures of women with an IUD who

applied to our clinic due to CPP.

Materials and Methods: Patients with IUD who applied to our clinic with CPP in the last 1 year (13.09.2022-13.09.2021) were included in the study. IUD cultures were taken from those who had vaginal discharge. Urine cultures were also taken from those who had complaints of frequent urination, urinary incontinence, and burning while urinating. The duration of IUD use and age of the patients were evaluated.

Results: In our clinic, IUD removal was performed on 418 people in the last 1 year, and 51 of them had chronic pelvic pain. The mean age of the patients was 49 (27-62). The mean duration of IUD use was determined as 7 years (2 months-15 years). Of the 51 patients in the study, cultures were taken when there was a suspicion of urinary tract infection in 22, and when there was a suspicion of vaginitis in 31 of them. Four of those with CPP and negative IUD culture had myoma (25%). None of the patients had endometriosis or ovarian cysts. Vaginal flora with the most lactobacilli was observed in the culture results of 77.4% (n=24) of those with CPA and suspected vaginitis. The most common bacteria are *Gardnerella vaginalis* (12.9%, n=4), *Candida* spp. (6.5%, n=2), *Klebsiealla pneumoniae* (3.2%, n=1) (Table 1). On the other hand, 54.5% (n=12) of the urine cultures were negative, and the most common pathogens were *Lactobacillus* spp. (9%, n=2), *Gardnerella vaginalis* (9%, n=2), *Streptococcus agalactiae* (9%, n=2), *Corynebacterium* spp. (9%, n=2), coagulase negative *Staphylococcus* (4.5%, n=1), *Echerichia coli* (4.5%, n=1) (Table 2). Five patients had IUD with levonorgestrel (LNG), and their IUD and urine cultures were negative.

Conclusion(s): IUD is a common method of contraception because it is safe, inexpensive, easily accessible, easy to use for a long time, and has a reversible effect. In our clinic, the rate of CPP in patients with IUD was 12.2%, which was consistent with the incidence of CPP in the general population (1). Accordingly, since the incidence of CPP is similar to the general population, it can be said that the use of IUD is not a predisposing factor for the development of CPP. In addition, the absence of reproduction in the group with LNG IUD may suggest that progesterone plays a protective role in the development of infection. As a matter of fact, there are publications on this subject that the short-term use of the LNG IUD temporarily reduces the dominance of lactobacilli, but after 1 to 5 years, these features return to pre-insertion levels, reducing the risk of complications to the initial levels (2). Similar to our study, Işık et al. (3), in their study investigating bacterial colonization with IUD culture by removing IUD for reasons other than pelvic inflammatory disease, observed growth in the culture of only one of 5 patients using LNG IUD. Although most of the culture results were negative in patients with an IUD and urinary symptoms, it was observed that urinary symptoms were resolved with IUD removal in the follow-up of the patients. There is no publication in the literature specifically comparing the urinary tract infection rates of copper IUD and LNG IUD. In a review examining urinary tract infections in women with an IUD, it was reported that studies conducted to date did not find a relationship between IUD exposure and the occurrence of UTIs (4,5).

It may be possible to have extensive information on this subject with studies to be conducted with larger sample groups. In addition, raising the awareness of patients about the use of IUD may have led to a decrease in the frequency of vaginitis.

Keywords: Intrauterine device; chronic pelvic pain; urine culture

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Table 1. Evaluation of bacterial colonization of the intrauterine device extracted from women with chronic pelvic pain

Culture of IUD	%	n
Lactobacillus spp.	77.4	24
Gardnerella vaginalis	12.9	4
Candida spp.	6.5	2
Klebsiella pneumonia	3.2	1

IUD: intrauterine device

Table 2. Evaluation of urine sample in women with chronic pelvic pain and urinary symptoms with IUD

Culture of urine	%	n
Negative	54.5	12
Lactobacillus spp.	9	2
Gardnerella vaginalis	9	2
Streptococcus agalactiae	9	2
Corynebacterium spp.	9	2
Coagulase negative *Staphylococcus*	4.5	1

IUD: intrauterine device

O21

A long-term complication of median episiotomy, perineal asymmetry and labia majoras fused to the perineum

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Background: Improper repair and healing of episiotomy may be associated with long-term aesthetic complications.

Case: A 46-year-old patient with gravida 2 parity 2 gave birth for the last time 15 years ago. She especially complained about the appearance of her vulva. She complained that the major labia were getting into the vagina during sexual intercourse and unenviable sound was coming out of the vagina during intercourse. On examination, the folds of the labium majora are fused in the perineal region. Posterior fourchette was indented inside the vagina. In addition, there was a scar area of approximately 2x1 cm in the perineal region. Volume loss was observed in labium majora (Figure 1). After catheterizing the bladder in the lithotomy position under general anesthesia, vaginoplasty was performed. A 4 cm median incision was made in the perineal region, and the labias were separated and repaired with 2.0 rapid vicryl. The perineal scar was removed and sutured. Fat was removed from the abdomen with suction, and 10 cc fat was filled into each labium (Figure 1). She was seen 1 week after the operation and was satisfied with the aesthetic result.

Conclusion(s): Episiotomy incisions that are not repaired in accordance with the anatomy may deteriorate body image and self-confidence for years until the patient decides for correction and applies to a specialist. Patient-based individualized options for anatomical and functional integrity should be decided together with the patient.

Keywords: Perineal asymmetry; median episiotomy; complication; perineoplasty

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Figure 1. Pre-operative and post-operative images of vulva

O22

Transobturator tape surgery experience: Analysis of 220 cases in a single tertiary center in Türkiye

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Background: Stress urinary incontinence (SUI), which can cause social and hygienic problems, affects 4-35% of women. It is the involuntary leakage of urine after increased intraabdominal pressure in certain situations, such as exercise, sneezing, coughing, and laughing, without bladder detrusor muscle contraction (1-3). Urethral hypermobility and intrinsic sphincteric deficiency are the two main mechanisms involved in the etiopathogenesis of SUI (4,5). The aim of SUI treatment is to relieve the symptoms and improve the quality of life of the female patient. Both conservative and surgical options are available for the treatment of SUI. The mid-urethral sling procedure was performed for the first time in 1996 using a mesh through the retropubic space with the aid of trocars (6). In 2001, TOT slings were introduced by Delorme in order to avoid retropubic insertion complications, such as bladder perforations, vascular injuries, and bowel injuries (7). The aim of this study was to investigate the intra and postoperative results and complication rates of the transobturator tape (TOT) procedures used for stress urinary incontinence (SUI) treatments in a tertiary center located in central Türkiye.

Materials and Methods: A total of 220 patients undergoing TOT procedures for SUI were prospectively evaluated. The demographic and clinical characteristics, preoperative and postoperative cystometry values, and operative outcome parameters of the study participants were analyzed.

Results: The mean age of the participants was 53.87±6.22 years old, 155 (70.5%) of them were in the menopausal period, and the

mean operation time was 18.43±3.98 minutes. While no significant difference was noted between the preoperative and postoperative periods with respect to residual volume (27.09±8.51 vs. 26.01±3.51 mL, p=0.125), there were significant differences in terms of the first urinary urge (142.61±20.25 vs. 145.64±20.91 mL, p<0.001), maximum bladder capacity (423.70±38.43 vs. 402.32±39.46 mL, p<0.001), the Q angle (45.54±5.33 vs. 43.81±6.15, p=0.001), Qmax (37.65±11.54 vs. 24.38±9.26 mL/s, p<0.001), Qave (19.92±9.64 vs. 14.77±8.71 mL/s, p<0.001), number of urinations during the daytime (7.29±1.35 vs. 6.58±1.29, p<0.001), and number of urinations during the nighttime (1.48±1.01 vs. 0.92±0.83, p<0.001).

Conclusion(s): This study demonstrated that the TOT procedure is an easy to apply minimally invasive technique with low peri and postoperative complication rates and a high success rate. Additionally, the TOT procedure reduces urinary retention symptoms, improves the quality of life of the patient, and reduces morbidity. Nevertheless, further studies with larger cohorts are needed to validate the results of the current study and to determine the long-term results.

Keywords: Stress urinary incontinence; transobturator tape; urodynamic; voiding function

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O23

One-year follow-up results of TOT and Burch procedure in the treatment of stress urinary incontinence

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Background: Stress urinary incontinence (SUI) is the complaint of involuntary loss of urine on effort or physical exertion including sporting activities, or on sneezing or coughing (1). Burch colposuspension was considered as the gold standard surgical treatment before Ulmsten and Petros (2) presented the tension-free vaginal tape (TVT) procedure in 1995 and, consecutively, Delorme (3) practiced the transobturator tape (TOT) (outside-in) procedure in 2001. However, Burch colposuspension is still a frequently performed and effective surgical procedure for SUI, especially when there is a need for concomitant pelvic surgery (4). In this study, we aimed to compare the results of TOT and Burch colposuspension operations, which are the most frequently performed surgical procedure in our clinic in cases with SUI.

Materials and Methods: Our study consisted of patients who applied to our clinic with the complaint of SUI and were not found to have uterine prolapse and cystocele during urogynecological examinations. The TOT group consisted of the cases who applied only with the complaint of SUI, and no additional pathological condition was detected in their urogynecological examination and Transvaginal ultrasonographic (TVUSG) evaluation. Burch group consisted of patients who were scheduled for abdominal surgery due to gynecological reasons such as uterine fibroids, ovarian cysts and menometrorrhagia, who had additional SUI complaints. In other words, TOT group cases only underwent TOT procedure, while Burch group cases were applied Burch procedure in addition to abdominal gynecological surgery. The ICIQ-SF (International Consultation on Incontinence Questionnaire-Short Form) questionnaire was used to determine the severity and type of incontinence of the patients. Exclusion criteria included gynecological malignancy, acute infection of the reproductive system or other organs, inability to tolerate surgery or anesthesia, uterine prolapse and cystocele. Patients' demographic information such as age, gravida, parity, body mass index (BMI), menopausal status, pre- and postoperative ICIQ-SF scores and residual urine volume were recorded. Urogynecological examinations, ICIQ-SF scores and residual urine volume assesment of all cases were performed again 6 and 12 months after the operation.

Results: Overall, 50 patients were operated on, according to our inclusion criteria (26 patients with TOT and 24 with Burch). Mean ages of the groups were 52.38 and 47.75, respectively. No significant difference was observed between groups in terms of cardiovascular disease, diabetes, birth type, BMI, gravida, and parity (p>0.05) (Table 1). Preoperative ICIQ-SF scores of the groups were 16.04 and 12.75, respectively. While there was no significant difference between the

two groups in the postoperative 6th month ICIQ-SF scores, the postoperative 12th month ICIQ-SF scores were higher in the Burch group. In addition, there was no significant difference between the two groups in the postoperative 6th month mean residual urine volume, while the postoperative 12th month mean residual urine volume was higher in the TOT group. That is, there was no significant difference between the 6th month mean residual urine volume of the Burch group and the 12th month mean residual urine volume, while the 12th month mean residual urine volume of the TOT group was found to be significantly higher than the 6th month mean residual urine volume (Table 2).

Conclusion(s): Burch and TOT surgical methods are still widely used among urogynecologists in the treatment of SUI. The results of our study showed that both methods were effective in the treatment of SUI, however, in long-term follow-up, there was a greater increase in ICIQ-SF scores in the Burch group and a greater increase in residual urine volumes in the TOT group. More case studies are needed in this area to support our results.

Keywords: Burch colposuspension; stress urinary incontinence; transobturator tape

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Table 1. Comparison of patient groups in terms of demographic and postoperative characteristics

	TOT (n=26)	BURCH (n=24)	p*
Age (year)	52.38±8.1	47.75±6.5	0.032*
Gravida	3.54±1.2	3.63±1.1	0.789
Parity	3.19±1.1	3.2±0.9	0.953
BMI (kg/m^2)	30.77±3.6	29.83±3.5	0.364
Medical comorbidities No CVD DM	 21 (80.8%) 4 (15.4%) 3 (11.5%)	 21 (87.5%) 3 (12.5%) 2 (8.3%)	0.997
Birth type Vaginal delivery Cesarean section	 2.9±1.1 0.38±0.6	 2.8±1.1 0.42±0.8	 0.768 0.878
Menopausal status Premenopausal Postmenopausal	 6 (23.1%) 20 (76.9%)	 9 (37.5%) 15 (62.5%)	
ICIQ-SF Preoperative Postoperative 6th month Postoperative 12th month	 16.04±3.3 1.04±1.0 1.38±1.0	 12.75±3.5 1.58±1.1 2.25±0.9	 0.001* 0.062 0.001*
Residual urine volume (mL) Postoperative 6th month Postoperative 12th month	 33.19±13.6 49.23±15.2	 38.33±13.7 39.72±13.2	 0.175 0.023*

*p<0.05. TOT: transobturator tape; BMI: body mass index; ICIQ-SF: international consultation on incontinence questionnaire-short form

Table 2. Comparison of postoperative 6th and 12th month results

	Postoperative 6th month	Postoperative 6th month	p*
ICIQ-SF TOT BURCH	 1.04±1.0 1.58±1.1	 1.38±1.0 2.25±0.9	 0.001* p<0.001*
Residual urine volume TOT BURCH	 33.19±13.6 38.33±13.7	 49.23±15.2 39.72±13.2	 p<0.001* 0.549

*p<0.05. TOT: Transobturator tape; ICIQ-SF: International consultation on incontinence questionnaire-short form

O24

A case of courvalarie uterus resulting with postpartum hysterectomy

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Background: Immature separation of placenta may result in upright, maternal hemodynamic instability, hypovolemic shock, renal failure, hysterectomy, need for blood transfusion, and maternal and infant death. In severe cases of detachment, blood leakage can be seen between the myometrial fibers extending to the serosal surface and this is called Couvelaire uterus. It increases the risk of uterine atony and postpartum hemorrhage. It is not an indication for hysterectomy alone. However, they respond less to treatment when atony or postpartum hemorrhage develops (1,2).

Case: A 37-year-old g5p2y2a2 pregnant woman arrived at our hospital 2.5 hours after the referral request from the district with complaints of intrauterine exfetus and vaginal bleeding. Active vaginal bleeding was detected in the hospitalization examination of the pregnant. Tetany was detected on uterine physical examination. On ultrasound, ex fetus compatible with bpd 32 w ac 31 w fl 28 weeks was observed. She underwent emergency cesarean section with the diagnosis of pregnant ablatio placenta, ex fetus and active vaginal bleeding. In the first examination results of the patient's hospitalization, hgb was observed as 9.3 hct 29.5 plt 132. A severe couvelaire uterus was detected. Ablatio placenta was observed. Amniotic fluid was followed by active blood. Ex fetus was delivered. The uterine kerr incision was sutured. A brief period of atony occurred. A b lynch was thrown into the uterus. Uterine arteries were ligated. Uterus collected. A Neleton drain was placed in the abdomen and a hemovac drain was placed under the skin. Intraoperatively, 1 erythrocyte and 1 fresh frozen plasma were inserted into the patient. The case lasted about 30-40 minutes. Postoperative patient's first hemogram in the service was hgb 6.7 plt 139 htc 21. Two erythrocytes, 2 fresh frozen plasma and 2 g fibrinogen were applied to the patient. At the postoperative 4th hour, her HB was 7.4 and there was no vaginal bleeding, and 150 cc of bleeding from the drain was considered good. At 6 hours postoperatively, hgb 6.4, plt 60, creatinine 1.9, 500 cc coming from the drain were observed, no active vaginal bleeding was observed. Four erythrocytes and 4 tdp were given to the postoperative total patient. Emergency laparotomy was decided for the patient because 1000 cc of hemorrhagic fluid came from the drain at the postoperative 7th hour and the control hgb was 5.9. A 500 cc hemorrhagic and necrotic uterine mass was observed in the abdomen and no active bleeding focus was detected. Bleeding in the form of leakage from the suture lines was detected. Hysterectomy was started. The patient, who was taken to the postoperative intensive care unit, was taken to the ward on the postoperative 1st day due to increased hemograms. The patient was discharged in the 1st postoperative week. Urea-creatinine was elevated in the patient. A diagnosis of acute renal failure was made by internal medicine. It was evaluated as normal on the 15th postoperative day.

Results: Our case, who was admitted to our hospital with the complaint of sudden abdominal pain, developed in utero due to severe detachment. Our patient, who came to the hospital about 4 hours after acute bleeding started, was found to have a couvalaire uterus during cesarean section. The patient, who developed atony at cesarean delivery and was followed up, underwent emergency laparotomy, and hysterectomy was performed when postpartum hemorrhage started at the 7th postpartum hour and DIC was observed. Our patient was given 8 units of erythrocyte and 4 platelet replacement and 2 g of fibrinogen. The postoperative values of our patient who developed acute renal failure were 15. returned to normal within days.

Keywords: Couvelaire uterus; postpartum hysterectomy; cesarean section

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O25

LEEP results of 579 patients between 2015 and 2020 in the middle Anatolia region of Türkiye

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Background: Cervical intraepithelial neoplasia (CIN) is a premalignant squamous lesion of the uterine cervix diagnosed through histopathologic evaluation of cervical biopsy material (3,4). Proper management of CIN is precarious because any delay in treatment increases the risk of cervical cancer, and overtreatment can cause some negative results such as preterm delivery, premature rupture of the membrane, and low birth weight (3-5). The two main management approaches for CIN are observation (cervicovaginal cytology and colposcopy) and local excision or ablation of the cervical transformation zone, hysterectomy is not considered the primary treatment (6,7). There are two types of treatment for CIN, depending on the degree of the disease; local ablative treatment or excision. Knife cone excision and radical diathermy are traditional methods and are performed under general anesthesia, whereas excisional procedures such as local ablative methods and loop electrosurgical excisional procedures (LEEP) can be performed under

local anesthesia in outpatient clinics (5). The transformation zone of the cervix should be fully seen and there should be no invasive and glandular disease in local ablative treatment. Excisional treatment is mandatory in case of insufficient colposcopic findings, and invasive and glandular disease (6). This study aimed to evaluate the results of loop electrosurgical excisional procedures (LEEP) of 579 patients who presented to our hospital for vaginal smears between 2015 and 2020.

Materials and Methods: The LEEP reports of 579 patients who presented to our gynecology clinic between January 2015 and December 2020 were retrospectively evaluated. The data were obtained from electronic patient records and the Medical Pathology Department archives.

Results: The mean age of the patients was 38.05+6.17 years. Colposcopy-guided biopsy was not taken from 102 patients. The results of the remaining 477 patients were as follows: no dysplasia (n=12; 2.1%), CIN-I (n=99; 17.1%), CIN -II (n=111; 19.2%), CIN-III (n=248; 42.8%), and cancer (n=7; 1.2%). Completed excision was performed in 87.0% of the patients using LEEP, the lesion was positive at the surgical margins in 10.9%, and the lesion could not be completely excised in 2.1%. The complication rate after LEEP was 3.1% (pelvic pain, n=5; 0.9% and bleeding, n=13; 2%). The histopathologic results of LEEP were as follows: benign (n=50; 8.6%), CIN-I (n=110; 19.0%), CIN-II (n=89; 15.4%), CIN-III (n=280; 48.4%), cancer (n=7; 1.2%), and metaplasia (n=37; 6.4%). The concordance between colposcopic biopsy and LEEP results was observed as 85.9% for CIN-I, 71.2% for CIN-II, 98.4% for CIN-III, and 85.7% for cancer diagnoses.

Conclusion(s): LEEP is a simple minimally invasive method used in the treatment of CIN, with low persistence, recurrence, and complication rates and increased HPV clearance in most patients. Our results support the consistency of cervical colposcopic biopsy and LEEP results.

Keywords: Biopsy; cervical intraepithelial lesion; colposcopy; LEEP

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O26

Investigation of the effect of ERAS programme on the quality of healing in laparoscopic hysterectomy

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Background: There are a lot of studies evaulating the relationship between enhanced recovery after surgery (ERAS) protocol and laparoscopic hysterectomies (LH) (1-5). The purpose of this study is to research the effect of ERAS protocol on perioperative and postoperative outcomes in LH performed for benign gynecological diseases.

Materials and Methods: This prospective study was performed with a randomized 100 participants who undergone Laparoscopic Hysterectomy between January and August 31, 2022. Standard care protocol was applied to 50 participants (group 1, control) and the ERAS protocol was applied to other 50 participants (group 2, study). As the primary outcome; the length of stay in the hospital, as the secondary outcomes; the duration of the operation, the amount of bleeding, postoperative nausea-vomiting, gassing time, visual analog scale (VAS) pain scores and complications were evaluated.

Results: There was no statistically significant difference between the groups in terms of socio-demographic characteristics, medicalhistory, operation indications, surgical procedures applied in addition to hysterectomy, operation time, preoperative and postoperative hemoglobin, amount of bleeding and use of drains ($p>0.05$). But a statistically significant difference was found in terms of nausea-vomiting, duration of gassing, visual analog scale pain scores, need for analgesia and length of hospital stay ($p<0.05$).

Conclusion(s): It has been observed that the ERAS protocol has positive effects on peri and postoperative outcomes in laparoscopic hysterectomy. A prospective study with a larger number of participants is necessary to confirm the validity of the results in existing studies.

Keywords: Hospital stay; laparoscopic hysterectomy; ERAS; enhanced recovery after surgery; pain

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027

Laparoscopic repair of small bowel perforation by intrauterine device: A case of 8 weeks pregnant woman

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Background: Intrauterin device (IUD) is one of the most common and effective contraceptive methods in the world. Small bowel perforation with IUD is a rare and life threatening complication. We aimed to present this case due to small bowel perforation with IUD in pregnancy is quite rare in literature.

Case: A 34-year-old 8 weeks pregnant woman was admitted to our clinic with right-lower quadrant pain. Patient referred our clinic due to missing IUD and 8 week pregnancy with abortus imminens. The patient had a history of copper-T 380A IUD placement 2 months ago. She reported that serious pain during insertion, persisted right-lower quadrant pain since insertion of IUD and it increased for 1 week. The patient had one cesarian section. Her hemodynamics were stable and her vital signs were normal. Leucocyte count was 18000/mm^3 in hemogram and other parameters were normal. In gynaecological examination revealed IUD strings invisible at the cervical os, and transvaginal ultrasound confirmed absence of echogenicity of IUD in intrauterine cavity and 8 week pregnancy with fetal cardiac activity. And an I-shaped echogenic focus were distinguished at the side of right adnex. Laparoscopic surgery was performed for the patient with ultrasound findings. In exploration, the small bowel segment adhered to the posterior wall of the uterus and right fallopian tube. The loop of bowel was separated of the uterus and fallopian tube using a combination of blunt and sharp dissection. At the point of attachment, IUD was detached from right fallopian tube lumen with "T" segment embedded in the bowel lumen (Figure 1). The bowel defect was repaired with 3/0 vicryl and 2/0 silk suture (Figure 2). After hemostasis control, the abdomen was washed and 1 drain was placed into the Douglas. At the end of the operation, fetal cardiac activity was confirmed by obstetric ultrasound. The patient was discharged on the postoperative 3th day to come for a follow-up visit. There were no complication and threat of miscarriage.

Conclusion(s): In cases of mislocated IUD penetrating the intestine, laparoscopy allows simultaneous RIA removal and bowel repairing. We chose laparoscopy for both locating IUD and repair of small bowel segment who had 8 weeks of pregnancy. Minimally invasive method improves postoperative quality of life of the patients.

Keywords: Intrauterin device; bowel perforation; laparoscopy; pregnancy

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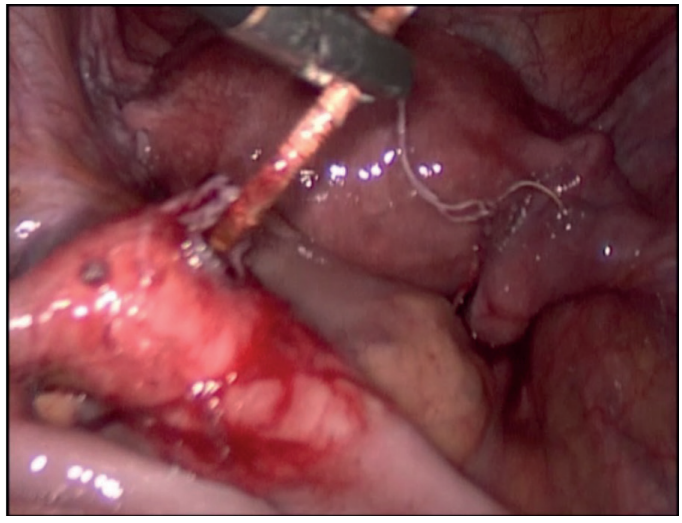

Figure 1. IUD was detached from right fallopian tube lumen with "T" segment embedded in the bowel lumen

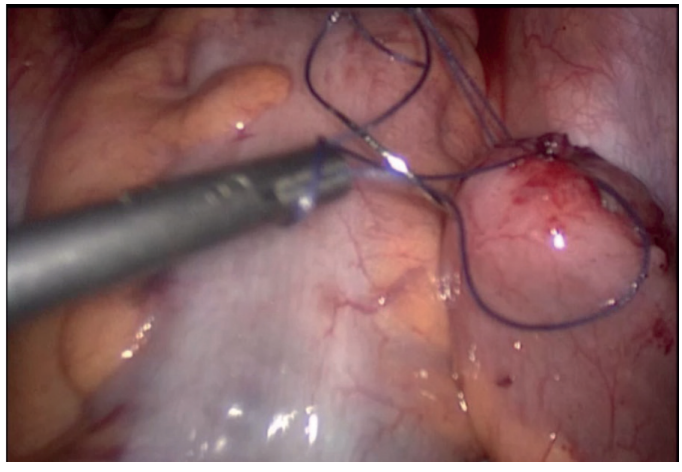

Figure 2. The bowel defect was repaired with 3/0 vicryl and 2/0 silk suture

O28

Microperforate hymen opening onto the urethral orifice: Report of two cases, one infertile and the other pregnant

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Background: Among hymen anomalies, microperforate hymen is one type of hymen associated with tiny opening which occurs rarely and exhibiting various symptoms.

Case 1: A 28-year-old nulligravid patient who had been married for 2 years presented to our outpatient clinic with the complaints of difficulty in coitus, pain and infertility. In gynaecological examination, no vaginal patency was observed, and labia majora, labia minora and urethral orifice were observed to be normal. The appearance resembled imperforate hymen. The patient described a normal menstrual history and frequency of coitus two to three times a week. Ultrasound revealed normal uterus and ovaries. Hematocolpos and hematometra were not observed. Examination and cystoscopy were performed under sedoanalgesia with a preliminary diagnosis of vaginal anomaly and uretrovaginal fistula. A normal bladder mucosa, normal urethral jet flow and proximal urethra were observed upon the cystoscopy. No fistula tract was observed. An opening to the vagina was observed from a 0.5 cm opening approximately 0.5 cm below the urethra (Figure 1A). When a cystoscope was inserted through this opening, normal vaginal mucosa and cervix were observed. After cystoscopy, a catheter was inserted into the urethra and excess hymenal tissue was cut and taken out under the guidance of a cannula, and a normal vaginal orifice was provided (Figure 1B, C).

Case 2: A 25-year-old patient visited our outpatient clinic at her 33+2/7 weeks of gestation. She had been married for 10 months. She was diagnosed as "vaginal agenesis" at the 20th gestational week during routine pelvic examination and concomittant hymenotomy with caesarean section recommended by her obstetrician. On inspection of external genitalia, the vaginal entrance was covered with an elastic hymen and an 0.3 cm diameter opening was observed at the level of the urethra (Figure 2A). She reported reguler menstrual cycles before pregnancy and regular coit 2 times a week until the last 3 weeks. Obstetric ultrasound revealed a normal intrauterine fetus. Hymenotomy was recommended under sedation in order not to lose the chance of vaginal delivery. Hymen was incised from the opening to 6 o'clock position and excised the excessive tissue (Figure 2B, 2C). Vagina and cervix were normal. Due to our experience in case 1, cystoscopy was not performed on this patient. Patient was discharged on the 1st postoperative day with topical dexpanthenol cream. Good wound healing was observed after two weeks' follow-up. She underwent an uncomplicated vaginal delivery at 40 weeks of gestation. A healthy baby was deli vered. The mother and baby were discharged after two postpartum days.

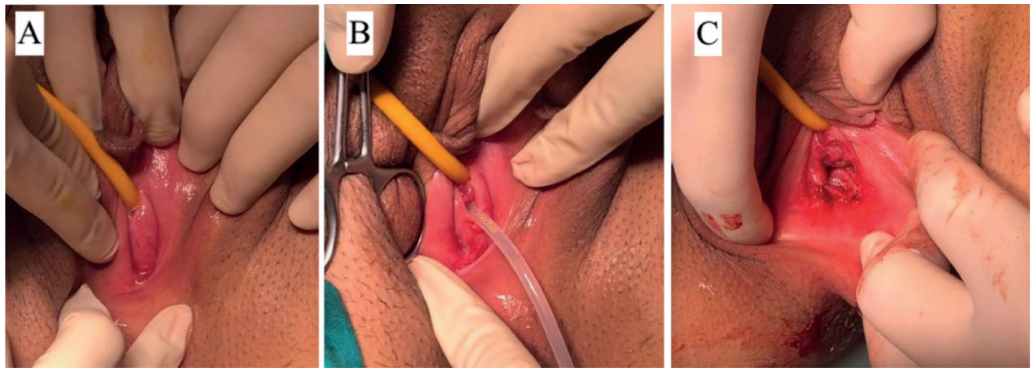

Figure 1. A: The opening on to the urethra mimics the appearance of an imperforate hymen. B: View of the hymen with a guiding instrument inserted thro ugh the opening C: View of introitus after hymenectomy

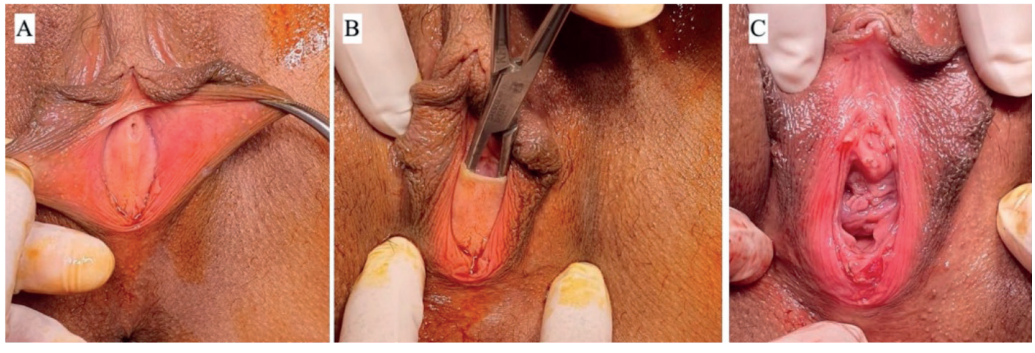

Figure 2. A: The opening on to the urethra mimics the appearance of an imperforate hymen. B: View of the hymen with a guiding instrument inserted through the opening C: View of introitus after hymenectomy

Conclusion(s): Microperforated hymen surgery is necessary for normal sexual intercourse and menstrual flow. Although rare, prenatal hymenotomy will allow.

Keywords: Hymenotomy; infertility; microperforate hymen; pregnant

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O29

Which one has a more profound effect on one's self-esteem: Oligomenorrhea or body mass index?

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Background: Body image is cognition of someone towards own body. Body perception scale (BPS) was described by Secord and Jourard to investigate the discontent of an individual for several body parts (1). Perception for body scale in women changes during puberty, pregnancy, puerperium, and menapouse (2). Hormonal changes may cause these alterations. There is limited data regarding the role of oligomenorrhea and obesity individually on body perception.

Materials and Methods: We evaluated girls studying at Pamukkale University with BPS. Their body mass index (BMI) and status of oligomenorrhea were noted. Girls with chronic disease were excluded from analysis. There were total 415 girls in final analysis.

Results: Mean age of the participants was 20.5±1.1 years. Other study parameters were demonstrated in Table 1. Univariate analyzes for the effect of BMI and oligomenorrhea on the total score of BPS yielded both significant (Tables 2, 3). We further performed a multivariate analysis including these parameters (Table 4). This analysis revealed that BMI and oligomenorrhea both have individually significant effect on BPS. Adjusted R^2 for this model was found to be 0.02.

Conclusion(s): Body perception is a complex situation that can be affected by multiple physical and psychological factors (3). In this study we documented that both BMI and presence of oligomenorrhea have negative impact on BPS in young women at university. The effects of these parameters were individually significant. Many other parameters have potential interaction with such model; therefore further studies are needed to explain this relation.

Keywords: Body perception scale; body image; oligomenorrhea; obesity

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Table 1. Characteristics of participants

Parameter	Study population N=415
Age (mean ± SD)	20.5±1.1
BMI (mean ± SD)	21.3±3.1
Presence of oligomenorrhea	90 (21.7%)

SD: standard deviation; BMI: body mass index

Table 2. Effect of oligomenorrhea on BPS total score

	Control group N=325	Oligomenorrhea group N=90	p-value
Total BPS score (mean ± SD)	138.4±24.3	131.3±24.6	0.015

BPS: body perception scale; SD: standard deviation

Table 3. Correlation of BMI with BPS

		BPS total scale
BMI	Pearson correlation coefficient	-0.109
	p-value	0.026
	N	415

BPS: body perception scale, BMI: body mass index

Table 4. Multivariate analysis of BMI and oligomenorrhea for predicting BPS

Parameter	Beta	t-test	p-value	Partial coefficient
BMI	-0.912	-2.315	0.021	-0.113
Oligomenorrhea	-7.302	-2.529	0.012	-0.124

BPS: body perception scale, BMI: body mass index

O30

Long-term consequences of gynecological cancer treatment on urinary incontinence

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Background: It is seen that the survival results of cancer patients are better than in the past, and other health problems arise with the increased life expectancy. Hysterectomy and radiotherapy are important risk factors for urinary incontinence (1). The aim of our study is to investigate the relationship between urinary incontinence and post-treatment period in cancer patients.

Materials and Methods: Fifty-two patients without recurrence who were operated for gynecological cancer between 2017 and 2022 were included in the study. Patients with recurrent pelvic organ prolapse and patients who died before the first treatment were not included in the study. Ninety-four patients who had hysterectomy for benign reasons were included in the control group. Urinary incontinence of the patients was questioned, and those who answered yes were classified as stress or urge urinary incontinence. We obtained the demographic data of the patients using a questionnaire.

Results: Of the patients who were operated for malignancy, 11 had cervical cancer, 28 had endometrial cancer, and 13 had ovarian cancer. Eight of the cervical cancers were operated only, 3 of them received adjuvant radiotherapy after the operation. Of the endometrial cancer patients, 10 were operated only, 9 received postoperative radiotherapy and 9 received postoperative adjuvant chemoradiotherapy. All ovarian cancers received post-operative adjuvant chemotherapy. Urinary incontinence was analyzed in 18 (34.6%) of gynecological cancer patients (23.0% stress and 11.6% mixed type) and 29 (30.8%) (21.3% stress and 9.6% mixed type) who underwent hysterectomy for benign reasons (p=0.740).

Conclusion(s): The risk of developing urinary incontinence does not change in patients who underwent hysterectomy for gynecological cancer compared to patients who underwent hysterectomy for benign reasons.

Keywords: Gynecological cancer; hysterectomy; urinary incontinence

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O31

A case report: Labial filling: Microfat & nanofat application

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Background: As with all skin tissue, thinning, sagging, wrinkles and depressions can be seen in the genital areas of people with age. For this reason, labium majus filling operations can be performed. Filling injection to the genital area has become popular especially in recent years (1,2). Hyaluronic acid injection or fat injection techniques can be used in filling processes. Fat tissue taken from the abdomen, inner parts of the legs or hips by liposuction is injected into the thinned genital areas with a cannula, and thus the genital areas that appear sunken become fuller. Autologous adipose tissue is theoretically an ideal soft tissue filler. Easy access and high biocompatibility are its most important advantages. In recent studies, it has been shown that stromal vascular fraction (SVF) cells in injected fat and adipose-derived stem cells (ADSCs) have versatile differentiation ability; it has been found that it can differentiate into adipocytes, osteocytes, chondrocytes and nerve cells. There are three types of oil used for fat grafting; macrofat, microfat and nanofat. Microfat application offers filling effect. Nanofat application, on the other hand, is used for tissue rejuvenation, thanks to its abundant stromal vascular fraction cells and stem cells, rather than its filling effect (1,2).

Materials and Methods: A 43-year-old patient applied to the outpatient clinic of our hospital. The patient had cosmetic concerns. Lipid filling was planned by applying microfat to the patient with age-related atrophy in the labium majus. At the same time, tissue rejuvenation was aimed by applying nanofat. McBurney's point was marked in the distance between the anterior superior iliac crest (SIAS) and the umbilicus, 1/3 of the way close to the umbilicus. Following the site cleaning, a small incision was made with a scalpel and a fat removal cannula was inserted at this point. A 12.5 cm long and 2.4 mm thick cannula was used. After the cannula was inserted, negative pressure was created. Fat collection was performed by going under our fingers in a fan style with the cannula superficial. It was closed by applying a pressure bandage to the abdomen. A total of 15 cc of material was obtained. The material was diluted 1/1 and washed with 15 cc SF for faster separation of the fat from the blood. The material obtained; it was left for about five minutes for the blood and fat to separate. After separation, the remaining oil was removed. It was passed 9 times through the blade system with 2400 microns. Then, 1200 micron blade system was passed 9 times and 9 cc microfat material was obtained. 5 cc of this material was separated as microfat for the filling process. The remaining material was passed through the 600 micron blade system 30 times to obtain nanofat. The vulvar skin was cleaned with 4% chlorhexidine gluconate. Then, the obtained microfat filling material was injected into the pubic region by inserting a cannula through two small

incisions. Nanofat material was applied by entering the vaginal mucosa at an angle of 10° at 5, 6 and 7 o'clock positions.

Results: No complication developed in the postoperative follow-up of the patient. Improvement was observed in the patient's preoperative complaints.

Conclusion(s): Due to the age-related atrophy in the labia, there are applications to hospitals with complaints related to functional, cosmetic, psychological and sexual problems. Especially in recent years, genital aesthetic operations, which are quite common in recent years, provide many benefits to patients both aesthetically and functionally when performed with the right technique. With microfat and nanofat filling applications, both tissue regeneration and filling processes are performed.

Keywords: Labiaplasty; lipid filler; microfat and nanofat application

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O32

The relationship of genital self-image with genital aesthetic requirement in a women of reproductive age

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Background: The aim of this study is to examine the genital image of single women between the ages of 21-30 using the female genital self-image scale (FGSIS); to examine the relationship between sexual activity, masturbation, awareness of the necessity of gynecological examination and desire for genital aesthetic intervention and FGSIS scores.

Materials and Methods: Data were collected from 71 women who were relatives of the patients who applied to the outpatient clinic in October/November 2022. The FGSIS seven-item, 4-point response scale is used to assess women's feelings and beliefs about their own sexual organs, and higher scores indicate a more positive genital self-image. Chi-square test and Student's t-test were used for categorical and numerical analysis.

Results: Genital aesthetic intervention was found to be statistically less in women with relatively higher FGSIS scores than in women with lower scores. Most of sexually active women have a gynecological examination history. There was no significant difference between two groups according to masturbation, sexually activity and had at least one gynecological examination. Patients who desire genital aesthetic surgery have low score and patients who do not desire aesthetic surgery have high FGSIS score.

Conclusion(s): Idea of having a genital aesthetic operation is strongly related to a woman's view of her genital image. In our study population there is no data that show sexual activity and gynecologic examination increase desire for genital aesthetic surgery. Patients who desire genital aesthetic surgery have low FGSIS score and this data is compatible with literature.

Keywords: Genital aesthetic; self-imaging; history

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Table 1. Comparison of factors affecting desire for genital aesthetics surgery

	Desire genital aesthetics surgery (n=16)	Not desire genital aesthetics surgery (n=55)	p (<0.05)
FGSIS score	20.6±4.7	23.3±3.7	**0.020**
Masturbation (last week) Yes No	 9 7	 27 28	 0.778
Gynecological examination Yes No	 5 11	 11 44	 0.510
Coitus Yes No	 4 12	 14 41	 1.00

FGSIS: female genital self-image scale

O33

Effect of incontinence on quality of life during pregnancy in nulliparous women

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Background: We aim to estimate the type, frequency, and severity and to evaluate symptoms and quality of life impact of urinary incontinence (UI) during pregnancy in nulliparous continent women.

Materials and Methods: Between 2016 and 2018, 121 primiparous women were included the study. Socio-demographic data, pregnancy and obstetric history, personal habits, uro-gynecological history and the changes associated with pregnancy during control visits in all trimesters and obstetric and fetal characteristics at the time of birth (from delivery records) were noted. Data were summarized as means ± standard deviations (SD) or percentages, as appropriate. Student's t-test done for analysis of continuous variables and the χ^2 test for categorical data.

Results: Of the 121 pregnant women, total of 68 (64.4%) reported symptoms of UI at any time during pregnancy. Analysis of the type of UI revealed that the most frequent type was SUI, which affected 38 (55.8%) of the pregnant women with incontinence regardless of the trimester. In the entire sample, urgency urinary incontinence was present in 9 (13.2%) of the pregnant women with urinary incontinence and 21 (31%) showed symptoms of mix urinary incontinence at different time during pregnancy. Women with stress urinary incontinence reported significant lower quality of life compared to women with urge UI or mixed UI.

Conclusion(s): These data corroborate that gestation and childbirth increase the UI. The study found that the quality of life of women experiencing UI was negative impacted.

Keywords: Urinary incontinence; pregnancy; quality of life

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O34

Conservative management of vulvar hematoma caused by blunt trauma

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Background: The vulva is protected against trauma by the dense adipose tissue under the labium majus. Since the adipose tissue is not discrete, adolescents and children are at a higher risk of hematoma and laceration as a result of trauma. Except during birth, vulvar hematoms are most commonly caused by blunt trauma with the legs open (1).

Case: A 42-year-old G2P1 patient was referred to our clinic from an external center with the diagnosis of vulvar hematoma after falling from a boat. In the first examination, a hematoma area of approximately 7*6 cm was observed at the level of deviating from the midline in the labium majus and minus (Figure 1). Catheter insertion was not considered because there was no problem with the patient's urination. After informing, a conservative approach was planned. In the case of the growth of the hematoma area, its boundaries were drawn with a pencil so that they could be easily understood. Analgesics and ice were applied to the patient during the follow-up. Regression in the hematoma area was detected at the 16th hour of the follow-up (Figure 2). The patient was discharged with recommendations.

Discussion: A complete gynecological examination is important after taking the patient's anamnesis. Hymen examination should definitely be included in the childhood and adolescent period (2). The labium, clitoris, hymen, perineum, and rectum should be examined individually. Prophylactic antibiotics are not required for vulvar traumas (3). If possible, it should be left without interference. Bleeding in hematoma from multiple areas is of venous origin. If the hematoma is attempted to be drained, it may be difficult to isolate and surgically control these veins. During this time, the patient may complain due to a feeling of fullness and pain. She may be concerned that she is not receiving treatment. In conservative management, applying ice packs in the first 24 hours may limit bleeding and edema. A foley urinary catheter should be applied during the initial evaluation. If the vulvar hematoma is gradually enlarging or the hematocrit is continuing to decrease, surgical intervention should be planned. It should be kept in mind that it can

expand towards the retroperitoneum. When surgery is planned, a long enough incision is made to observe the bleeding veins. If active bleeding vessel orifices are visible, they are ligated. The subsequent cavity formed is closed with sutures in the form of 8 or filled one by one. Absorbable monofilament sutures should be preferred. The incision should also be closed one by one when closing. A drain can be placed if necessary (4). Vascular methods, such as embolization can be used in selected cases. Pelvic rest is recommended for 3-4 weeks, depending on the depth and size of the hematoma. NSAIDs or narcotic analgesics are used to treat pain.

Conclusion(s): Long-term counseling for these patient may help prevent future problems such as dyspareunia, sexual dysfunction, and chronic pelvic pain.

Keywords: Vulvar hematom; blunt trauma; vulvar trauma

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Figure 1. Hematom area in labium minus and majus during the first examination

Figure 2. Hematom area in labium minus and majus in 16th hour of follow-up

O35

Sacrospinous ligament fixation-unilateral or bilateral?

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Background: Sacrospinous ligament fixation is a proven surgical treatment for pelvic organ prolapse (POP) (1). In this study we will present comperative results of unilateral and bilateral methods that has been performed in our clinic.

Materials and Methods: Fourty-six sacrospinous ligament fixation surgeries that has been performed University of Health Sciences Türkiye, Ankara Dr. Sami Ulus Child Health and Diseases Training and Research Hospital between January 2019 and June 2021 has been included. Preoperative grades, accompanying surgeries, lengths of stay, complications, follow-up urinary incontinence and relapse rates has been analyzed. In addition, the cases were divided into 2 separate groups as unilateral and bilateral methods and compared in terms of success and complications.

Results: In a population of 46 patients with a mean age of 51.13, SSF was performed unilaterally in 29 patients and bilaterally in 17 patients. The findings are included in the table.

Discussion: When we compare the relapse rates of unilateral and bilateral groups, in early post-operative period, neither group showed any signs of relapse. However after their 1 year follow-up exam, unilateral group had 6 prolapse while bilateral group had none. This seems to indicate that bilateral repair method allows the pelvic floor stability to remain intact for a longer duration. The lower average age of the patient group in bilateral repair and the low presence of comorbidities may also ensure the continuation of pelvic floor support in these patients. In one of these six patients grade3 uterine descensus, grade 2 cystocele and enterocele was present before the surgery and grade 2 cystocele was detected at the 1st year examination. In another patient, grade 3 uterine descensus, grade 3 cystocele, grade 3 rectocele was repaired and grade 2 cystocele was relapsed. In addition, cuff prolapse, cystocele and enterocele were present in another patient at the initial examination, and postop grade 2 cystocele was detected at the first year follow-up. First year relapses of these three patients can be explained by their higher grades of POP but the remaining three patients had same pre-op POP grading as bilateral group. There was also 1 high grade patient in the bilateral group without a 1st year relapse.

Conclusion(s): Even though we couldn't identify a superior method for this surgery, bilateral method seems to be more effective at maintaining the long-term pelvic floor integrity than unilateral method if the pre-op grading of the POP was high (1,2). Considering the bilateral method could increase the chance of nerve and blood vessel injury, the choice of selecting a suitable method should include the patient and be made on a case to case basis.

Keywords: Suture tecnique; pelvic organ prolapse; ligament/surgery; urinary incontinance; treatment failure; postoperative complications

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O36

Effects of human papillomavirus and LEEP on sexual function

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Background: We evaluated the sexual function of human papillomavirus (HPV)-positive patients after colposcopy and loop electrosurgical excision procedure (LEEP).

Materials and Methods: This study enrolled 344 patients with an HPV infection detected on routine screening in 2020-2022. Sexual function was evaluated using the Female Sexual Function Index (FSFI), which consists of six sections: Desire, arousal, lubrication, orgasm, satisfaction, and pain.

Results: The mean age of the 344 HPV-positive patients was 37.2±8.2 years, and 28.2% of them were unmarried. Colposcopy, cervical biopsy, and LEEP were performed in 251 (73.0%), 189 (54.9%), and 42 (12.2%) patients, respectively. The sexual history and FSFI scores of the patients were recorded. The total and individual parameter scores on the FSFI decreased significantly after colposcopy. Similarly, the total and individual parameter scores on the FSFI were lower at 8 weeks after LEEP compared to those before LEEP.

Conclusion(s): Cancer-related fear and anxiety and LEEP may cause sexual dysfunction in HPV-positive patients.

Keywords: Human papillomavirus; sexual dysfunction; loop electrosurgical excision procedure; colposcopy

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O37

Postoperative second year results of trapezoid repair for anterior compartment defects

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Background: The most common prolapsed vaginal segment is the anterior vaginal compartment (1). Repair for anterior vaginal compartment has the highest risk of reccurence (2). Iliococcygeal fixation (ICF) was first defined as a safe and practical technique to treat apical prolapse by suturing vaginal tissues the iliococygeal muscle fascia (3). Based on this experience, iliococygeal muscle strands as an alternative candidate anchoring point for the prolapsed anterior segment. We alternatively named this technique as "trapezoidal repair" since restores the rhomboid/trapezoid shape of the pubocervical fascia that lies beneath the bladder. In this study, we analyzed the postoperative second year results of trapezoid repair for anterior compartment defects.

Materials and Methods: All surgical operations were performed by the same surgeon. Surgical technique for ICF was defined previously in detail (4). Clinical and surgical characteristics of the patients were recruited from patient files. Patients had undergone a postoperative standardized evaluation including POP-Q scoring and face to face interview with patient filled UDI-6 scales.

Results: Overall 13 patients had postoperative second year results. POP-Q results revealed that anatomical success persisted (Table 1). When evaluated for UDI-6 scores, we found significant improvement in total scores (Figure 1). No long-term complications were observed.

Conclusion(s): In this study, we presented the surgical and postoperative characteristics of the first 13 cases, in which ICF was performed by the same surgeon for native tissue repair of anterior compartment defects. Second year results showed that ICF is a safe and effective method for the surgical treatment of anterior compartment defects. Further studies are needed to explore long-term results of this technique.

Keywords: Cystocele; iliococcygeal fixation; trapezoidal repair

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Table 1. POP-Q results after trapezoid repair for anterior compartment defects

	Preoperative		Postoperative 24th month	
	Mean	SD	Mean	SD
Aa	1.15	0.69	-1.77	0.99
Ba	2.77	1.42	-1.73	0.97
Gh	4.54	0.63	4.23	0.63
Pb	3.12	0.82	3.50	0.89
TVL	8.67	1.15	8.83	1.34
Ap	-1.38	1.12	-2.58	0.64
Bp	-1.54	1.13	-2.50	0.65
C	-1.67	2.67	-5.00	1.54
D	-4.33	2.53	-5.33	1.67

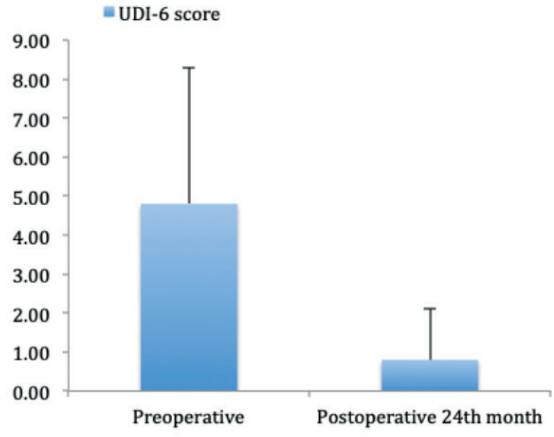

Figure 1. Postoperative 24th month evaluation of UDI-6 total score

O38

A new technique for stress urinary incontinence without using vaginal mesh

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Background: Our aim in this presentation is to show that stress urinary incontinence (SUI) patients can be treated without any mesh complications with the vaginal meshless urethropexy technique

Materials and Methods: In this video, presentation, the urethropexy technique, which we apply as a new approach without using vaginal mesh in the treatment of stress urinary incontinence, is described. A 50-year-old G5P1 patient applied to the urogynecology department with the complaint of urinary incontinence. In preopeartive evaluation, stress test +, Q-tip test: 60°, post-void residual urine was determined as 20 cc. With transperineal ultrasound, anterior (α angle) and posterior urethral angles (β angles) were evaluated both at rest and by valsalva maneuver. ($\Delta\alpha = 50°$, $\Delta ß = 20°$). Urine culture was detected as negative. With the diagnosis of SUI, urethropexy indication was given.

In the lithotomy position, the following steps, shown in the video, were applied in order.

Step 1: On the vaginal mucosa in the midurethral region, 1 cm² islet was created. The edges of this islet were dissected from the adjacent mucosa (Figure 1). This area was then de-epithelized with electrocautery.

Step 2: With the first of the no: 1 prolene (polypropylene) sutures, the paraurethral point shown in Figure 1 was entered from A and exited from point B. It was passed through the middle of the mucosal island and passed to the opposite side. It was entered from point C, exited from point D, and (Ω) shape was created. Second prolene suture was entered from point B and exited from point A to form a knitting with the first suture. It was passed through the midline of the mucosal island to the opposite side. It was entered from point D, exited from point C, and (Ʊ) shape was formed. Thus, a hand-made hammock-like support structure was created under the urethra.

Step 3: Bilateral tunnels were opened under the symphisis pubis with scissors. With the help of guides, prolene sutures were passed through the retropubic area and removed from the skin 2.5 cm lateral to the midline on both sides over the mons pubis. Bladder walls were checked with simultaneous cystoscopy. Guides were removed after the bladder walls were observed intact.

Step 4: With the help of guide, the polypropylene mesh was placed into the mons pubis, 2 cm below the skin (Figure 2). So, about 5 cm of mesh was used, the excess mesh was cut (Figure 3).

Step 5: Prolene sutures on both sides were fixed with small size hemoclips by passing 1 cm distance to the ends of the mesh. Thus, slipping of the suture and mesh was prevented. 3-4 knots were tied on the hemoclips and finally the incisions were closed.

Conclusion(s): Meshes placed transvaginally can cause serious complications. Due to FDA warnings about mesh complications in recent years, return to meshless operations is observed in incontinence and pelvic organ prolapse reconstruction operations. Urethropexy technique can be preferred in the surgical treatment of SUI, but long-term results are needed.

Keywords: Stress urinary incontinence; urethropexy; anti-incontinence procedures

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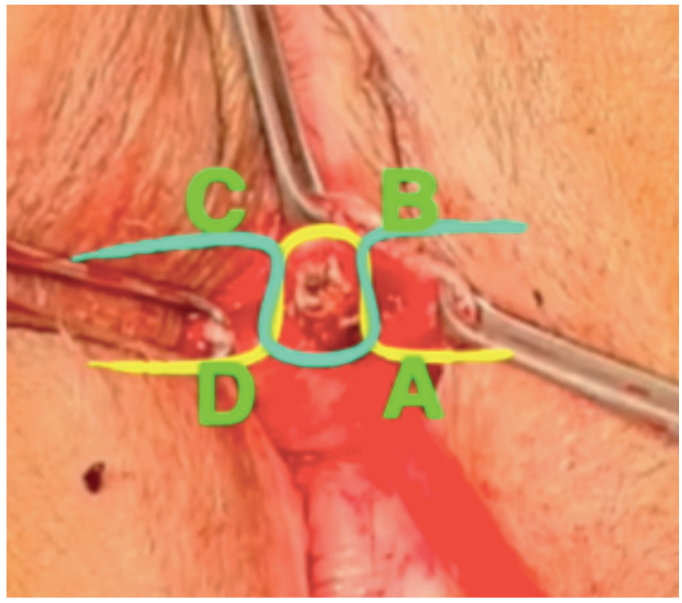

Figure 1. Suburethral mucosal island

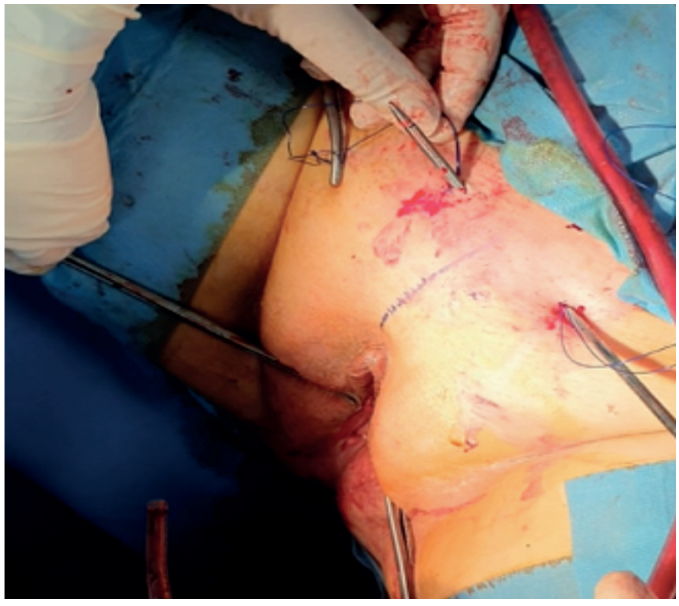

Figure 2. Insertion of polypropylene mesh with the help of guide

Figure 3. Representation of mesh placed into the mons pubis

O39

Characteristics of patients with late recurrent endometrial cancer

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Background: We planned this study to assess endometrial cancer (EC) patients who had late metastasis.

Materials and Methods: This retrospective study constituted a review of the records of patients who were diagnosed with EC and underwent hysterectomy at the gynecologic oncology clinic between 1996 and 2018. Relapses occurring after the first three years following primary treatment of EC are considered late recurrences. Post-relapse survival (PRS) refers to the time to the last follow-up or the patient's death after relapse.

Results: Late metastases were identified in 42 patients, 20 (47.6%) of whom had locoregional recurrence and 22 of whom (52.4%) had extrapelvic recurrence. Median disease free survival (DFS) times were 61 (range: 43-78) and 65 (range: 48-81) months for the groups with locoregional and extrapelvic recurrence, respectively (p=0.462). The 5-year PRS rate for the patients was 61.1%, with 63.8% having locoregional and 59.4% having extrapelvic late metastasis (p=0.969).

Conclusion(s): Among the patients with late metastases, those with endometrioid type EC were found to have a better prognosis. It has been shown that locoregional or extrapelvic organ recurrence does not significantly affect survival in patients with late relapse. Although our results are not statistically significant for cases of locoregional late metastases, surgical resection increases survival rates.

Keywords: Recurrence; endometrial cancer; disease free survival

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O40

The frequency of histological chorioamnionitis in preterm deliveries

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Background: Histological chorioamnionitis (HCA) is defined as inflammation of the amniotic fluid, membranes, placenta, and decidua, and usually occurs via the ascending route from the lower genital tract and rarely via the hematogenous route (1). HCA is observed in 4% of term pregnancies, but more frequently in preterm births and premature rupture of membranes (2). It is also more frequently observed in prolonged labor, in the presence of meconium in the amniotic fluid, in smokers, and in nulliparity (3). Complications such as uterine atony, uterine rupture, blood transfusion requirements, postoperative wound infection, endometritis, pelvic abscess, septic pelvic thrombophlebitis, and sepsis, and a risk of hospitalization in the intensive care unit have been reported in women with HCA. Fifteen percent of women with clinical chorioamnionitis are diagnosed in the antepartum period and 85% in the postpartum period (4). The purpose of this study was to determine the frequency of histological chorioamnionitis (HCA), a potential cause of preterm labor.

Materials and Methods: One hundred twenty-three women with gestational ages of <37 weeks who underwent vaginal or cesarean delivery between January 1, 2021, and December 31, 2021, in our hospital obstetrics clinic (group 1, negative histological chorioamnionitis, n=41 and group 2, positive histological chorioamnionitis, n=82) were prospectively included in the study. The participants' socio-demographic characteristics and laboratory results were documented and compared between the groups. The placentas were examined for diagnosis of HCA by a senior pathologist.

Results: Although hemoglobin levels, mean platelet volume, mean corpuscular volume, and lymphocyte, monocyte, and platelet counts on admission and after delivery were comparable between the HCA-negative and HCA-positive groups (p>0.05), leukocyte (11168.29±2757.66, respectively, vs 13022.80±4795.97, p=0.008) and neutrophil (8202.44±2459.82 vs 10220.73±4608.84, p=0.002) counts, the neutrophil-lymphocyte ratio (4.31±2.39 vs 6.15±4.64, p=0.004), and C-reactive protein (CRP) (9.35±3.29 vs 19.11±10.46 g/dL, p=0.022) values differed significantly between the groups. The recommended threshold for the neutrophil-lymphocyte ratio was 3.34 [area under the curve (AUC)=0.639, 95% confidence interval (CI) 0.538-0.802, sensitivity 78.1%, specificity 61.0%]. The cut-off point for CRP levels at ROC analysis was 6.5 mg/dL (AUC =0.601, 95% CI 0.490-0.710, sensitivity 58.1%, specificity 47.2%).

Conclusion(s): The findings from this study show that the prevalence of HCA is quite high in pregnant women with preterm delivery, and that the neutrophil/lymphocyte ratio has higher sensitivity and specificity in detecting HCA compared to CRP levels. Further studies with larger cohorts are now needed to elucidate this issue.

Keywords: C-reactive protein; histological chorioamnionitis; neutrophil-lymphocyte ratio; preterm delivery

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O41

A glimpse of colpoclesis operation in a secondary care hospital

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Background: The purpose of study is to give insight and encourage young speacialists and assistants by showing them a video presentation that can be performed as a single physician at a secondary health institution case of neglected and advanced vaginal cuff prolapse.

Case: The 67 years old patient had a history of 9 normal vaginal deliveries, had his last menstrual period 15 years ago, had no additional disease. She undergone laparoscopic total hysterectomy and cystorectosele operation due to stage two uterine prolapse 9 years ago. The sexual inactive patient applied us for suffering from cuff prolapse. After the gynecological examination, total colpocleisis was recommended to the patient,and it was explained to the patient that she would not have penetrative vaginal function again. The operation was carried out as described in Te linde. The anterior and

posterior of the vagina was divided into 4 sections with a marker Pen and de-epitheliazied by sharp and blunt dissection. The peritoneum that was opened during de-epithelialization was closed, then the anterior and posterior vaginal mucoza was excised. Three circular suturations was performed to close the remaining potential gaps. After the vaginal incision was closed horizontally, colporraphy was performed posteriorly. The perineum was repaired after perineal strengthening with a deep suturation on levator muscles.

Conclusion(s): The operation was completed successfully and the patient was discharged second postoperative day without complications. *De novo* stress urinary incontinence and dysuria were not detected six months after the surgery. Total colpocleisis is a successful surgical option in patients who are no longer sexually active with advanced pelvic organ prolapse, in elderly age. This surgery can be done at the secondary health institution easily, despite the prejudice and concerns.

Keywords: Colpocleisis; vaginal hysterectomy; pelvic organ prolapse

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O42

Does increased retrovesical angle have any impact on quality of life in women with stress urinary incontinence

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Background: Transperineal ultrasonography (TPUS) can be used to assess several dynamic pelvic floor parameters (1). However, specific markers have not been described for definitive diagnosis (2). The effect of these markers on quality of life is similarly unknown. In this study we aimed to assess the effect of increased retrovesical angle (RVA) on quality of life in women with stress urinary incontinence (SUI).

Materials and Methods: Patient files of women assessed with TPUS were retrospectively analyzed. Women with SUI were analyzed and RVA measurements were extracted. Increased RVA was defined as ≥140°. Socio-demographic parameters of the study group were also assessed. Incontinence impact questionnaire (IIQ-7) was used for evaluation of incontinence related quality of life (3).

Results: There were total 52 women with SUI who had available RVA measurements. Of them 40 had normal RVA measurements (<140°). Basal characteristics of the study groups are summarized in Table 1. When IIQ-7 total scores were compared between two groups, no significant difference was found between two groups (Figure 1).

Conclusion(s): This study documented that abnormal RVA measurements do not have any impact on incontinence related quality of life among with SUI. Similar to our results, Alkan et al. (4) also reported similar Michigan incontinence severity index scores among pregnant women with open RVA (>140°) and intact RVA (<140°). Their findings suggested that the pelvic floor ultrasound parameters of the anterior compartment did not predict the subjective urinary incontinence severity of women in their third trimester of pregnancy (4). In addition to this, we documented that RVA measurements neither affects incontinence related quality of life in women with SUI.

Keywords: Transperineal ultrasonography; retrovesical angle; stress urinary incontinence

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Table 1. Characteristics of the study population

Parameter	RVA <140°	RVA ≥140°	p-value
Age (years)	50.4±11.6	49,9±7.2	0.903
BMI (kg/m^2)	28.1±4.5	29.5±5.2	0.387
Gravida	3.4±1.7	2.8±1.2	0.254
Vaginal delivery #	2.6±1.4	2.3±1	0.549

RVA: retrovesical angle; BMI: body mass index

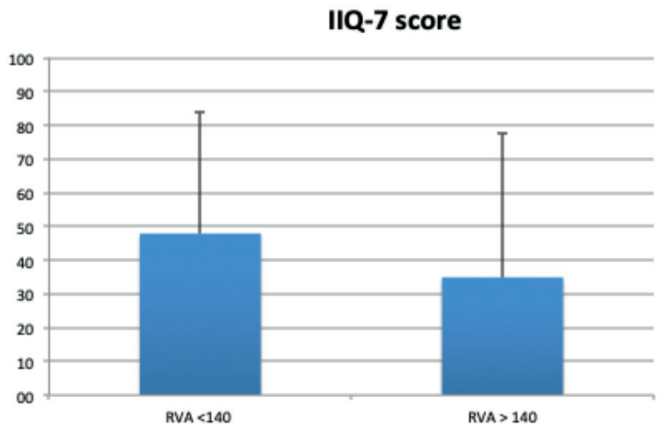

Figure 1. Comparison of total IIQ-7 scores between two groups
IIQ-7: incontinence impact questionnaire

O43

Gynecological system involvement of hematogenous malignancies

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Background: Primary hematological malignancies of the gynecological system are rare (1). Information is limited to only case reports and a small number of case series in the literature. In this study, it was aimed to investigate the clinicopathological features of the cases whose initial diagnosis was made in gynecological materials and who were diagnosed with hematological malignancy in the light of the literature.

Materials and Methods: In our study, 5 patients who underwent retrospective surgery with the diagnosis of gynecological cancer in the Department of Obstetrics and Gynecology, Obstetrics and Gynecology, University of Health Sciences Türkiye, İzmir Tepecik Training and Research Hospital, between September 2007 and November 2022, but who had hematological malignancies and progressed with gynecological organ involvement, were examined in our study.

Results: All gynecological cancers were screened retrospectively over a 15-year period between 2007-2022. Cases with a previous hematological malignancy were excluded in our study. In the retrospective examination, 5 cases that were not diagnosed by bone marrow biopsy or lymph node involvement and were first diagnosed in gynecological organs were detected. The age of the patients ranged from 28 to 74. Two of the 5 cases were operated for adnexal mass, dysgerminoma, sex cord stromal tumor, and were diagnosed with Diffuse Large B-cell Lymphoma in the ovary in the final pathology. One patient was diagnosed with small Lymphocytic Lymphoma/Chronic Lymphocytic Leukemia infiltration in the endometrial polyp, one patient with Diffuse Large B-cell Lymphoma infiltration on cervical biopsy, and one patient with Plasmacytoma presenting with amyloidosis in the cervix.

Discussion: More than 80% of primary or secondary lymphomas of the uterus are B-cell, and the vast majority are Diffuse Large B-cell lymphomas. Most of them are asymptomatic and present clinically as abnormal uterine bleeding or adnexal mass (1-3). The treatment is systemic chemotherapy and radiotherapy for those localized to the cervix. The case with Small Lymphocytic Lymphoma/Chronic Lymphocytic Leukemia infiltration in the endometrial polyp was diagnosed as Chronic Lymphocytic Leukemia in the bone marrow biopsy performed later. No bone marrow involvement was observed in the subsequent bone marrow biopsies of the other 4 cases. Systemic chemotherapy and local radiotherapy to the cervix in 2 cases with cervical involvement were given to the patients. The cases were in remission in the controls. In conclusion, primary cervix, corpus and bilateral ovarian involvement of Leukemia, Lymphoma or Plasmacytoma are rare localizations (4). Granulosa cell tumor and dysgerminoma are considered in the preliminary diagnosis in frozen materials, especially in adnexal masses in young patients. It should be kept in mind that lymphoma infiltration may also occur.

Conclusion(s): Our study is a unique study in which these cases, which were not diagnosed with hematological malignancy until that time, but presented with abnormal uterine bleeding and adnexal mass, and whose initial diagnosis was made in gynecological materials, were compiled.

Keywords: Plasmacytoma; large B-cell lymphoma; metastases; ovarian mass

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O44

Development of fistula from the vagen to the skin as a long-term complication of the use of mesh in anti-incontinence surgery

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Background: Stress urinary incontinence (SUI), a problem seen in about half of women and can benefit from the operation, is seen in approximately 4-35% of women (1). SUI is involuntary urinary incontinence due to increased intra-abdominal pressure (cough, sneeze, etc.) in the absence of detrusor contraction (2). Although lifestyle changes, pelvic floor exercises, and topical vaginal estrogen may be effective in treatment, surgical intervention may be required in unresponsive patients (3).

Case: Our patient is 59 years old and had an anti-incontinence operation (a history of trans obturator tape surgery (TOT)? Four-arm transvaginal mesh?) eight years ago. In June 2022, an anal fistula operation was performed due to the complaint of anal discharge. Vaginal examination revealed a fistula orifice lateral to the anus (Figure 1). A minimal fistula opening to the vagina was observed 2 cm proximal to the urethra orifice and 1 cm left lateral to the urethra orifice; after methylene blue was administered through the fistula tract (Figure 1). The fistula tract was washed with oxygenated water and isotonic, and a thin guide was sent through it with the help of gel, and the mucosa was dissected approximately 3-4 cm by following the guide in the vagina (Figure 2). The visible part of the mesh residue in the fistula tract was excised. The fistula tract was cleared with a brush, and the mucosa was sutured primarily. The skin was enlarged with a vertical 2 cm incision, the skin tension was relieved, and the visible tract epithelium was excised. Reachable areas were cleaned and closed in the same way. It was sutured so that there was no subcutaneous space, and the skin was closed primarily. The patient was discharged one day without any early complications. No additional problem was observed in the second and fourth-month follow-ups of the patient. While the development of vesicovaginal fistula can be seen in anti-incontinence surgeries in cases such as passing the bladder with a mesh and not being noticed, fistula to the vaginal skin is very rare. Although fistula treatments can be complex, the risk of recurrence increases when the etiologic cause cannot be eliminated entirely. No problems were encountered in the follow-up of this case, and it was not possible to completely remove the mesh.

Conclusion(s): The most common mesh complication in SUI surgery, in which autograft or mostly synthetic mesh is preferred, is mesh erosion. Patients should be informed that meshes are permanent materials and that a rare complication such as a fistula may develop.

Keywords: Fistula; anti-incontinence surgery; mesh

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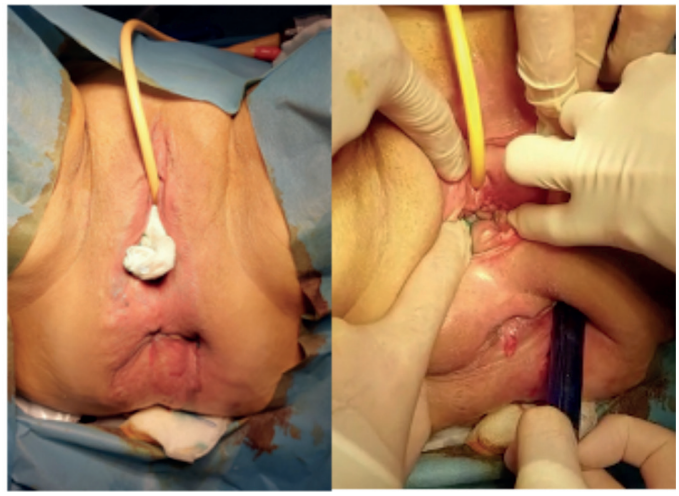

Figure 1. The fistula is visible on the left lateral of the anus and the tract of the fistula is seen with methylene blue

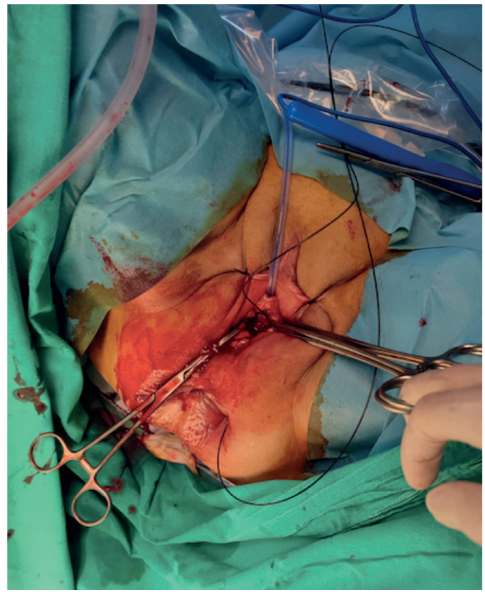

Figure 2. A guide placed in the fistula tract

O45

Recurrent mesh erosion after laparoscopic sacrocolpopexy: A case report

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Background: Pelvic organ prolapse is a common condition in women. In addition to conservative treatments, management can involve surgical procedures. Among the surgical procedures, sacrocolpopexy is the gold standard treatment method. Mesh erosion rates after sacrocolpopxy vary between 2-10%. Mesh erosion can be asymptomatic or cause signs and symptoms such as vaginal discharge, pain, bleeding, dyspareunia and recurrent urinary tract infections (1,2).

Case: A 48-year-old patient, who had previously undergone total laparoscopic hysterectomy and sacrocolpopexy operation in our clinic due to uterine prolapse, was treated with transvaginal partial mesh excision due to mesh erosion in the 9th postoperative month with complaints of vaginal discharge and dyspareunia. After 6 years, the patient applied to our clinic again with the same symptoms, and the patient required laparotomic surgery.

Discussion: Surgical interventions for mesh erosion involve transvaginal, laparoscopic and laparotomic procedures. In cases where the mesh infected, systemic infection, migration of the mesh to the bladder or rectum, the laparotomic procedure comes to the forward among the options (3,4). As in our case, the need for reoperation may occur after transvaginal partial excision.

Conclusion(s): Mesh erosion after sacrocolpopexy may also occur with serious conditions such as osteomyelitis (5). In rare cases, mesh erosion surgery may be required many years after the first operation. For these reasons, patient follow-up at relevant intervals in the postoperative period has great importance.

Keywords: Pelvic organ prolapse; sacrocolpopexy; mesh; erosion

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O46

Lipoleiomyoma, a rare benign tumor of the uterus: A case report

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Background: Lipoleiomyoma is a rare lesion of the uterus that occurs in perimenopausal and postmenopausal patients (1). It consists varying amounts of mature adipose tissue and smooth muscle cells. Although it is often identified in the uterus, it may also arise in the cervix, retroperitoneal, round ligament, intravascular, intra-abdominal, broad ligament, ovary and omentum (2). Therefore, they may be confused with adnexal masses during imaging. We aimed to present our case lipoleiomyoma originating from the uterus.

Case: A postmenopausal 52-year-old female patient presented with complaints of abdominal pain and bloating. Ultrasonography revealed a heterogeneous mass commencing by the pelvic area and covering the entire abdomen, which was thought to be ovarian origin. The patient's abdominal tomography result was "Hypodense lesion with lobulated contours, 32x22 cm in axial sections, covering the abdomen, with thick septations and soft tissue densities". Ovarian cancer or mesenteric lesions could not be excluded. The patient's endo-colonoscopy was normal. The operation was planned as midline incision. On exploration, the mass was originated from the uterus and attached to the left adnex. Hysterectomy-bilateral salpingoopherectomy was performed and sent to frozen section. Frozen result was reported as benign. In the final pathology, the macroscopy was interpreted as33x23x12 cm, pink-gray colored, nodular tumoral tissue consisting irregular cystic and myxoid degeneration areas and yellowish coloured areas. Immunohistochemically, pathology examples were stained withSMA, Ki-67, S100 and evaluated as compatible with lipoleiomyoma.

Discussion: In the uterus, benign lipomatous tumors are rarely identified. These lesions may be asymptomatic or cause complaints such as vaginal bleeding and abdominal pain. Resembling well-differentiated liposarcoma, it is important to confirm the benign nature of this tumor. Normally, there is no adipose tissue in the uterus, so the etiology of these lesions isn't known exactly. It's suggested that lipoleiomyomas are caused by fatty metamorphosis of uterine smooth muscle cells, which may continue to form localized or diffuse mature adipose tissue in the leiomyoma or myometrium, rather than fatty degeneration (3-5). Pathogenesis is still unknown. Dermoid cyst, lipoma, well-differentiated liposarcoma, extra-adrenal myelolipoma, lipoblastic lymphadenopathy and angiomyolipoma should be considered in the differential diagnosis of large fatty masses in the abdomen. Surgery should be recommended to

patients with intraabdominal tumors, who are symptomatic or have suspicion of malignancy. Risks and comorbidities of surgical resection should be explaining (6).

Conclusion(s): Lipoleiomyoma should be considered in the differential diagnosis of intra-abdominal masses. Although imaging plays a significant role in the preoperative diagnosis of lipoleiomyoma, it is the pathological examination that confirms the diagnosis.

Keywords: Lipoleiomyoma; lipomatous tumors; leiomyoma variant

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O47

The effect of urinary cathetter implementation time after TOT surgery on post-surgery urinary retension

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Background: Transobturator tape (TOT) is one of the most common surgical treatments for stress urinary incontinence (SUI). In this study, we aimed to compare the relationship between urinary catheter application times and urinary retention, dysuria and amount of first micturition applied to the bladder after TOT surgery.

Materials and Methods: A total of 60 (sixty) patients diagnosed with stress urinary incontinence and undergoing TOT surgery between September 2020 and September 2022 were included in the study. All patients were subjected to a subjective "stress test" before surgery, and stress urinary incontinence was diagnosed. The mobility of the bladder neck and proximal urethra was determined with the "Q-type test". Patients with mixed urinary incontinence, a history of previous vaginal surgery and systemic comorbidity were excluded from the study. Urine cultures were obtained from all patients before surgery. Age, body mass index (BMI), urinary incontinence duration, gravida and parity of the patients were recorded. Regional spinal anesthesia was applied to all patients. TOT surgery was performed on 60 patients with macropormonoflamenpolyprolene mesh (safyre®) using the outside-in method by the physicians who applied the same surgical technique. The patients were divided into two groups according to the duration of urinary catheter application. Thirty patients in whom a urinary catheter was applied for 12 hours after surgery were determined as group 1, and the other 30 patients with a urinary catheter for 24 hours after surgery were determined as group 2. Oral intake and mobilization times of the patients were the same. The catheters of both groups of patients were removed by applying the urine collection and discharge method called the gymnastic method. The catheters of both groups of patients were withdrawn by applying the urine accumulation and discharge method called the gymnastic method.

Results: There was no statistically significant difference between the demographic data of the patients such as age, BMI, gravida-parity numbers and incontinence times. Demographic data of the patients are given in Table 1. Spontaneous urination rates within 6 hours after urinary catheter removal were 26/30 (86%) in group 1 patients and 28/30 (93%) in group 2 patients (p=0.863), although there was no significant difference between the two groups, they were higher in group 2 patients is too much. There was no statistically significant difference between the two groups in terms of the amount of urine during the first micturition and complaints of dysuria. Postoperative findings are given in Table 2.

Discussion: TOT surgery is the most common surgical method in the treatment of SUI. During this method, the bladder neck and proximal urethra neck are elevated (5). For this reason, in order to prevent the risk of urinary retention and globe vesicale in the acute postoperative period of the patient, urinary catheterization is one of the most important methods, until the postoperative edema decreases and the acute pain period passes. Catheter application time varies between clinics. In our study, dysuria and first urine volumes of the patients were similar after 12 hours and 24 hours of urinary catheterization. Although there was no statistically significant difference in first urination rates in group 1 patients, they were observed less frequently compared to group 2 patients.

Conclusion(s): We think that early discharge after TOT surgery or, if there is no other indication, a bladder catheter application for at least 24 hours is more successful in preventing postoperative urinary retention.

Keywords: Stress urinary incontinence; transobturator tape; post-operative management

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Table 1. Demographic data of patients

	Group 1	Group 2	p
Age	36	34	0.901
Body mass index	25	27	0.689
Gravida	6	5	0.651
Parite	4	4	1
Urinary incontinence times (months)	25	23	0.884

Table 2. Postoperative findings of the patients

	Group 1 (n=30)	Group 2 (n=30)	p
Spontaneous micturition	26	28	0.863
Spontaneous first urine volume	220 mL	235 mL	0.641
Dysuria	11	14	0.710

O48

The effect of hydration with oral distille on amniotic fluid index and perinatal outcomes in isolated oligohidramnios

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Background: Amniotic fluid index (AFI) is mostly derived from the fetus and fetal urine and fetal swallowing play the biggest physiological roles in the dynamic structure of the AFI (1,2). Idiopathic (isolated) oligohydramnios (IO) is diagnosed if there is a decrease in amniotic fluid without a medical or obstetric problem (3). There are methods such as amnioinfusion, intravenous or oral hydration, desmopressin, and termination of the pregnancy among the treatment options (4,5). This study was aimed to compare effects of maternal oral tap water and distilled water hydration therapy on AFI and perinatal-postnatal outcomes in third trimester pregnant women diagnosed with isolated oligohydramnios (IO).

Materials and Methods: A total of 40 participants diagnosed with IO were included in the study between February 2022 and June 2022. A total of 2000 mL distilled water was intaken daily for seven days by the first 20 participants (group 1) and a total of 2000 mL tap water was intaken Daily for seven days by the last 20 participants (group 2). Fetal biometric measurements of the participants were performed at the begining of the study and at the end of the study by the same physician. Primary outcome was the effect of hydration on the AFI and secondary outcomes were perinatal outcomes.

Results: There was no significant difference in terms of demographic characteristics, fetal biometric measurements, uterine artery Doppler index, gestational age at delivery, the rate of primary cesarean deliveries, birth weights and birth height, neonatal intensive care unit admission, laboratory outcomes between the groups ($p>0.05$). While there was no significant difference in pre-hydration in AFI values between the groups (55.80 ± 12.14 vs 57.15 ± 10.97; $p=0.714$), but a statistical significant difference was found in post-hydration in AFI values (77.80 ± 11.56 vs 44.30 ± 10.90; $p<0.001$).

Conclusion(s): This study showed that maternal oral hydration is an easily applicable and effective methods in the treatment of IO. Prospective studies with larger numbers of participants are needed to confirm to validate the findings of current study.

Keywords: Distilled water; oligohydramnios; perinatal outcomes

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O49

The effect of combined oral contraceptive use in polycystic ovary syndrome on metabolic parameters

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Background: Polycystic ovary syndrome (PCOS), which affects approximately 5-10% of women reproductive age, is one of the most common reproductive endocrinopathies (1,2). It is a complex and heterogeneous disorder, and its physiopathology is not yet clear. The suggested factors that are responsible for the pathogenesis include defective steroid biosynthesis and insulin resistance with hyperinsulinemia that aggravates hyperandrogenism (3,4). This study aimed to evaluate whether combined oral contraceptives (COC) used in polycystic ovary PCOS have an effect on metabolic parameters.

Materials and Methods: A total of 102 participants (n=52, group 1, PCOS) and (n=50, group 2, control) who applied between September 1, 2020, and September 1, 2021, in our hospital reproductive endocrinology clinic were prospectively included in the study. Physical examination, laboratory, ultrasound, body fat analysis were performed on the participants at baseline, third and sixth months, and the obtained data were recorded. COC was started in both groups. Primary outcome was to show the effect of COC use on metabolic parameters and secondary outcomes were to examine the effect of COC on PCOS symptoms.

Results: Menstrual cycle regularity was provided and the cycle duration was significantly improved in the PCOS group ($p<0.001$). There was a significant decrease in Ferriman Gallwey score (FGS) ($p<0.001$), the rates of hirsutism ($p<0.05$) and acne ($p<0.001$) in the PCOS group. There was a significant decrease in ovarian volume and follicle count in the PCOS group ($p<0.001$). Although serum FSH, E_2, progesterone, HbA1C, post-prandial glucose, HDL, LDL and total cholesterol levels were comparable ($p>0.05$), serum LH, total testosterone, DHEA-S, HOMA-IR, and triglyceride levels were different between the groups ($p<0.05$). Additionally, there was no significant difference in body distribution, impedance analysis, and the change of BMR between the groups ($p=0.245$).

Conclusion(s): This study showed that the use of COC in PCOS improves clinical symptoms and does not adversely affect metabolic parameters. Prospective studies with larger numbers of participants are needed to confirm the validity of the findings in our study.

Keywords: Combined oral contraceptive; metabolic parameters; polycyctic ovary syndrome

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O50

Comparison of the frequency of histological chorioamnionitis between term and preterm deliveries

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Background: Histological chorioamnionitis (HCA) is observed in 4% of term pregnancies, but more frequently in preterm births and premature rupture of membranes (1,2). It is also more frequently observed in prolonged labor, in the presence of meconium in the amniotic fluid, in smokers, and in nulliparity (3). Complications such as uterine atony, uterine rupture, blood transfusion requirements, postoperative wound infection, endometritis, pelvic abscess, septic pelvic thrombophlebitis, and sepsis, and a risk of hospitalization in the intensive care unit have been reported in women with HCA. Fifteen percent of women with clinical chorioamnionitis are diagnosed in the antepartum period and 85% in the postpartum period (4). The purpose of this study was compare of the frequency of HCA between term and preterm deliveries.

Material and Methods: One hundred twenty-six women with gestational ages of <37 weeks who underwent vaginal or cesarean delivery between January 1, 2021, and December 31, 2021, in our hospital obstetrics clinic (group 1, term labor, n=63 and group 2, preterm labor, n=63) were prospectively included in the study. The participants' socio-demographic characteristics and laboratory results were documented and compared between the groups. The placentas were examined for diagnosis of HCA by a senior pathologist.

Results: Although age, body mass index, the numbers of gravity and miscarriage, and 5. min APGAR scores were comparable between the groups ($p>0.05$), the number of parity [2.0 (1.0-2.0) vs 1.0 (0-2.0), $p=0.008$], gestational age delivery (38.84 ± 0.34 vs 33.79 ± 2.81, $p<0.001$), 1. min APGAR scores (8.81 ± 0.69 vs 8.03 ± 1.82, $p<0.001$), and NICU admission rate [6 (9.5%) vs 27 (42.9%), $p<0.001$] differed significantly between the groups. While there was no difference in hemoglobin levels, neutrophil, lymphocyte, and monocyte counts between the groups ($p>0.05$), leukocyte (10382.54 ± 2020.58 vs 12133.33 ± 4936.01, $p=0.001$) count, the neutrophil-lymphocyte

ratio (4.21±1.60 vs 5.46±4.48, p=0.040), and C-reactive protein (CRP) (6.46±5.56 vs 15.9±9.27 g/dL, p=0.042) values were statistically difference between the groups. As regards, the histopathological findings, acute [5 (7.9%) vs 31 (49.2%), p<0.001] and mild corioamnionitis [21 (33.3%) vs 31 (49.2%), p<0.001] were more frequent in the preterm delivery group.

Conclusion(s): The findings from this study show that the prevalence of HCA is quite high in pregnant women with preterm delivery, and the neutrophil/lymphocyte ratio and CRP levels have also higher. Further studies with larger cohorts are now needed to confirm our results.

Keywords: C-reactive protein; histological chorioamnionitis; neutrophil-lymphocyte ratio; preterm delivery

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O51

Microarray expression results of VEGF, YAP1 and PTEN immunostains in preeclampsia cases

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Background: The basic mechanisms and etiology of preeclampsia development are still unknown (1). Thus, many markers have been to determine according to the etiological hypothesis. Yes-associated protein (YAP) is a transcriptional coactivator of the hippo pathway and phosphatase and tensin homolog (PTEN) is a tumor suppressor gene that stops the cell cycle. It has been also identified that endothelial dysfunction is caused by disrupting vascular endothelial growth factor (VEGF) and endothelial receptor compatibility in preeclampsia (2,3). In this study, we aimed to evaluate the expression of YAP1, PTEN, VEGF in the placentas of patients with preeclampsia and placentas of healthy pregnant women for trophoblast invasion, which is similar to cancer etiopathogenesis.

Material and Methods: The placentas of 70 mothers who gave birth, including 30 preeclampsia and 40 healthy controls, were evaluated. YAP1, PTEN and VEGF immunohistochemical staining were performed using the microarray method on placental tissue.

Results: The mean ± standard deviation for YAP1, PTEN and VEGF intensity were; 1.57±0.71,2.59±0.80, 1.61±0.59, respectively. PTEN intensity was statistically significantly lower in the preeclampsia group than in the control group (2.37±0.99 vs 2.75±0.58, p=0.049). There was no difference between the groups in terms of YAP1 and VEGF staining (p>0.05).

Conclusion(s): The etiopathogenesis of preeclampsia is still unclear. However, since trophoblast invasion and endothelial repair have similar aspects with cancer mechanisms, both preeclampsia and cancer studies are progressing by supporting each other. Our study is a prototype study showing that large-participation studies can be carried out by using the microarray method as an economic model.

Keywords: YAP1; PTEN; VEGF; immunohistochemistry; preeclampsia; microarray

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O52

Is menstrual irregularity related to ortorexia?

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Background: At the present time changes in cultural formations and life style induce rapid alterations in eating habits. Although, eating disorders have been acknowledged since early years, anorexia nervosa (AN) and bulimia nervosa (BN) were recently added to classification systems (1). Orthorexiavnervosa (ON) has also recently been defined for the first time by Bratman et al. (2). This term indicates a pathological fixation of consuming healthy and suitable food (3). ORTO-11 is a validated scale that was defined to investigate this situation and adapted in to Turkish by Arusoğlu et al. (1) In this study we hypothesized that there may be a association between oligomenorrhea and ON.

Materials and Methods: We evaluated 344 university girl students with face-to-face interview including a query for oligomenorrhea. ORTO-11 was applied to all participants. Socio-demographic parameters of the girls were also noted.

Results: There were total 73 (21.2%) girls with oligomenorrhea. Mean body mass index and age were comparable between students with and without oligomenorrhea (Table 1). When ORTO-11 total scores were compared between groups, we observed no significant difference (Table 2).

Conclusion(s): ON is considered to be similar of obsessive-compulsive disorder (4). However, there has been no enough data that investigate associated disorders with ON. In this study, we documented that ON is not associated with oligomenorrhea. Further studies are needed to investigate the effects of ON on hypothalamic-pituitary-gonadal axis.

Keywords: Orthorexia; eating disorders; oligomenorrhea

Table 1. Age and BMI of the study population

Parameter	Without oligomenorrhea (n=271)	With oligomenorrhea (n=73)	p-value
Age	20.46±1.14	20.53±1.13	0.611
BMI	21.41±3.21	21.12±2.88	0.497

BMI: body mass index

Table 2. Comparison of ORTO-11 total score between girls with and without oligomenorrhea

Oligomenorrhea	ORTO-11 total score	p-value
Absent	26.6±4.8	0.237
Present	25.9±5.9	

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O53

Risk factors for anal HPV infection in postmenopausal women

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Background: Human papilloma virus (HPV) is the most common cancer virus and virtually all cases of cervical cancer are caused by HPV infection. HPV is also implicated in the pathogenesis of anal carcinoma (1). It has been proposed that concomitant anal HPV infection may increase the risk of reinfection in cervix, that may progress to high grade lesions (2). However, there has been scanty data regarding the status and prognosis of anal HPV infection in women with cervical lesions. It is evident that there is an urgent need for exploring the status and prognosis of anal HPV infection especially in women who had already attended to a screening program for cervical cancer and managed accordingly. The ultimate goal would be to screen ano-genital HPV related cancers altogether, if possible. It has been argued that anal HPV infection can be transmitted to women primarily through receptive anal intercourse (3). The route of transmission, however, can be sexual or non-sexual. In this study we aimed to evaluate anal HPV infection and related risk factors in postmenopausal women. Such information is needed to define the anal HPV infection status in this group of women in order to design further longitudinal studies.

Materials and Methods: Study group was composed of 30-65 years old women and all documented to have cervical HPV infection. Anal specimens were collected as inserting Dacron swabs into the anal canal and rotating in circular motion with gentle pressure. Those swabs were then placed into liquid transport media (digene® HC2 DNA Collection Device, Gaithersburg, MD, USA) and transported to microbiology laboratory. All laboratory procedures were performed

by a technician who was blinded to the subject's medical history. DNA extraction was performed using "EZ1® Advanced XL Nucleic Acid Purification" instrument (Qiagen Inc., Valencia, CA) according to manufacturer instructions. Amplification and detection was carried-out using "HPV Genotypes 14 Real-TM Quant" kit (NLM, Settala MI, Italy) that allowed identification of 14 high risk genotypes (16, 18, 31, 33, 35, 39, 45, 51, 52, 56, 58, 59, 66 and 68). Anal swabs was reobtained if the first sample was found to be inadequate for analysis.

Results: Overall 65 women who met inclusion criteria were analyzed. Of these, 28 were postmenopausal. Comparison of postmenopausal and premenopausal group according to their basal characteristics is shown in Table 1. Among 28 postmenopausal women, 10 (35.7%) found to have active anal HPV infection. Similarly, 17 (45.9%) premenopausal had anal HPV infection. Postmenopausal women were also analyzed individually for possible risk factors of anal HPV infection (Table 2). Neither age and BMI, nor HPV types in cervix and smoking status were associated with anal HPV infection.

Conclusion(s): To our knowledge there has been no published data yet documenting anal HPV status among women referred and managed after a HPV based screening program. It is obvious that baseline characteristics and risk factors of the HPV screen positive group would be considerably distinct from women analyzed in older studies. Several previous studies have investigated coexisting anal HPV colonization along with cervical HPV infection. D'Hauwers et al. (4) investigated anal HPV prevalence in women attending to a colposcopy clinic found presence of HPV in the anus as 56.3% that is similar to our results. Hernandez et al. (5) reported baseline anal and cervical HPV infection in a low-risk population from Hawaii. They observed concurrent anal and cervical HPV infections in 13% of women in their study. In this study we were unable to demonstrate any risk factor for anal HPV infection in postmenopausal women. Critically, the clinical significance of anal HPV infection is completely uncertain in this group of women. Therefore, longitudinal larger trials are urgently needed to define these risks and tailor related algorithms both for the primary screening and for the follow-up this group.

Keywords: Human papilloma virus; anal cancer; infection; screening

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Table 1. Comparison of postmenopausal and premenopausal group according to their basal characteristics

Parameter	Premenopausal group (n=37)	Postmenopausal group (n=28)	p-value
Age (years)	40.7±3.3	53.8±5.9	<0.001
BMI (kg/m^2)	25.9±3.8	30.1±4.9	<0.001
Gravida	2.5±1.2	3.0±1.7	0.221
Age of first intercourse	20.6±4.2	21.0±4.3	0.734
Multipartnerity	7 (18.9%)	4 (14.3%)	0.745

BMI: body mass index

Table 2. Evaluation of postmenopausal women for possible risk factors of anal HPV infection

Parameter	Anal HPV negative	Anal HPV positive	p-value
Age (years)	54.1±6.1	53.3±5.7	0.733
BMI	28.9±4.8	32.4±4.4	0.70
HPV 16/18 in cervix	9 (50%)	4 (40.0%)	0.705
Smoking	7 (38.9%)	2 (20.0%)	0.417

BMI: body mass index

O54

Evaluation of urinary incontinence and overactive bladder symptoms in female medical school students and relationship with affective temperament characteristics of individuals

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Background: Although urinary incontinence is not a life-threatening event, the discomfort caused by constant wetness, irritation, and odor causes emotional problems. Overactive bladder (OAB) is a set of symptoms, the most critical sign of which is a "sudden urge to urinate" (1). Animal studies have linked impaired serotonergic neurotransmission to OAB (2). However, the etiology is still unclear. Temperament profiles have been claimed to be related to serotonergic activity and have been studied in many psychosomatic disorders (3,4). Based on this point, this study aimed to investigate the relationship between affective temperament type and OAB symptoms in individuals with OAB symptoms.

Materials and Methods: Ninety-eight female students studying at Pamukkale University Faculty of Medicine were included. The participants completed the socio-demographic data collection form, ICIQ-SF (International incontinence consultation questionnaire-short form) for urinary incontinence, OAB-V8 form for overactive bladder, and TEMPS-A scale to determine emotional temperament characteristics after obtaining prior information and consent. Validity and reliability analyses of the Turkish versions of all forms are available (3,5). The forms were not completed by face-to-face interview; all participants completed the documents themselves. If the score obtained in the OAB-V8 form was ≥8, the individual was considered to have OAB and included in the patient group.

Results: The mean age of the individuals included in the study was 21.67±0.743 (min=20 - max=24). The ICQ score was found to be 0.65±1.73 (0-10). OAB scores were 6.89±6.79 (0-34). The temperament characteristics of the participants were examined with the TEMPS-A scale. The participants were evaluated in two groups: OAB<8 (n=67) and OAB≥8 (n=31). There was no statistically significant difference between the two groups in the depressive, hyperthymic, irritable, cyclothymic, and anxious temperament scores (Table 1).

Conclusion(s): Overactive bladder is also frequently encountered in young patients; however, young patients show the characteristics of dry-type overactive bladder. No significant relationship was found between the presence of overactive bladder and temperament characteristics.

Keywords: Urinary incontinence; overactive bladder; psychosomatic disorders

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Table 1. Comparison of temperament characteristics of participants according to the presence of OAB

Temperament characteristics (TEMPS-A scale)	OAB<8 n=67	OAB ≥8 n=31	p
Depressive	5.67±3.61	5.93±3.35	0.557
Hyperthymic	7.29±3.82	6.87±3.86	0.471
Irritable	3.20±3.33	4.35±4.56	0.296
Cyclothymic	7.58±4.74	9.00±5.57	0.246
Anxious	6.92±4.97	7.87±6.04	0.602

O55

Evaluation of the results of laparoscopic burch colposuspension operation

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Background: Although stress urinary incontinence (SUI) can often be a component of urethral sphincter weakness, it is characterized by urethral hypermobility as a result of reduced urethral support (1). Burch colposuspension is the gold standard surgery for the treatment of SUI. In this study, we aimed to evaluate the results of laparoscopic (L/S) Burch colposuspension surgery performed in our clinic.

Materials and Methods: In this study, patients who attended to Obstetrics and Gynecology clinic, Balıkesir University Faculty of Medicine between June 2021 and October 2022 due to SUI, were planned for L/S Burch surgery with or without total laparoscopic hysterectomy and bilateral salpingoopherectomy (TLH&BSO) surgery. Thirty patients were included in this study. Patients with umbilical hernia, mesh surgery and neoadjuvant chemotherapy were excluded. Under laparoscopic observation, 22 patients underwent TLH&BSO, and 8 patients underwent only L/S Burch colposuspension surgery. During the procedure, the pubic arc was reached by entering the Retzius space behind the bladder. Arcus tendineus fascia pelvis was seen in the lateral side of the pubic arc. The bladder was suspended to Cooper ligaments by passing through the fascia with 2.0 Ti-cron sutures (polyester, non-absorbable). Then the peritoneum was closed with 1 vicryl continuously.

Results: The mean age of the 30 patients was 52.4 and the mean body mass ındex was 28.4 kg/m^2. The mean duration of L/S Burch colposuspension surgery was recorded as 24.6 minutes. Minor bleeding was observed in the Retzius area in 7 cases and the bleeding was controlled with the Ligasure. Bladder injury occurred in 2 cases and bladder repair was performed with 2-0 vicryl by the same surgeon. The catheters of these two patients were checked and changed once a week in the postoperative period and removed with bladder gymnastics after 2 weeks. After two weeks, complete recovery was observed in the patients. 14 no. hemovac drains were placed in all of the patients who underwent TLH&BSO. A drain was placed in the Retzius area only in 1 case. In the postoperative 6th hour and 12th hour complete blood count controls, it was observed that the mean hemoglobin values decreased by 1.2 g/dL units. No recurrence was detected in the 1st month, 3rd month and 6th month controls of all the patients.

Conclusion(s): Following the report published by the FDA (Food and Drug Administration) in 2011 on complications associated with transvaginal mesh, the use of slings has been restricted all over the world (2). After that, interest in Burch colposuspension, which is the gold standard in treatment, flared up again (3). This surgery is thought to restore anatomical support to the bladder neck and prevent urethral mobility with Valsalva. In our study, no recurrence was observed in patients who were followed up until the 6th month. In conclusion, Burch surgery has an important role in the surgical repair of SUI.

Keywords: Stress urinary incontinence; laparoscopic Burch colposuspension; anti-incontinence surgery

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